NEWSLETTER
SASKATCHEWAN SOIL CONSERVATION ASSOCIATION

Issue #1 April 1988

VIEWPOINT

Glen Hass, P. Ag., Associate Professor of Extension, Division of Extension and Community Relations, University of Saskatchewan

This article is the personal viewpoint of the author and not necessarily that of the SSCA.

Conservation pays! We have heard that comment more and more in recent months. Those of us who are concerned about soil conservation can readily accept that it is an important practice. And we can agree that in the long run good soil management does pay. But soil conservation also costs. I recently read an editorial in which the editor was condemning Saskatchewan farmers for their intention to increase summerfallow acres in 1988. The writer went on to point out that with proper use of fertilizers, chemical weed control, legume crops and no tillage, farmers could begin to build up lost organic matter and prevent soil erosion. Such advice is certainly noble enough but fails to address some of the other factors that influence a farmer's decision regarding conservation practices.

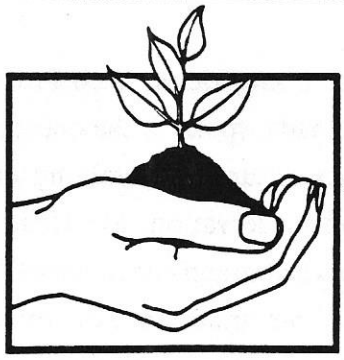
Economics is a major factor to be considered. Most farmers I know are very concerned about their soil. They are prepared to adapt new practices to suit their own enterprise, but if it isn't economical then they are not likely to be enthused. This is particularly true in times of low economic returns. Those farmers who are facing short-term difficulties are not able to integrate practices which will have a positive effect in the long term. In these cases, conservation costs!

Another factor which must be considered is moisture. There is a general concern this spring that a major drought could occur. I often think of my father's words, "No rain, no grain, no gain." While we would like to believe that modern agronomic practices can compensate for lack of moisture, we still need Mother Nature's help.

A third factor influencing farmers' decisions relating to conservation is the effect of government policies. I think primarily of quota systems, stabilization payments, set-aside programs, etc., etc. And of course these are not just Canadian but global policies as well. They do, however, have a direct effect on each farmer.

Thus, before writers condemn farmers for their lack of concern relating to soil conservation, it would be wise to consider the farmers' plight. Such oversimplification as presented in the editorial that I read does very little to promote good soil conservation. Unfortunately, many urban people read such editorials and accept the message as fact. Perhaps we should do some research into the effects of a cheap food policy on soil conservation.

Members of SSCA are invited to submit articles for publication in our newsletter to Glen Hass, Rm 110 Kirk Hall, Division of Extension and Community Relations, University of Saskatchewan S7N 0W0.



National
Soil Conservation Week
April 11-17, 1988

A SYSTEMS APPROACH TO SOIL CONSERVATION

The Saskatchewan Soil Conservation Association held its first annual conference and annual meeting in Saskatoon on February 16 and 17, 1988. The theme, "A Systems Approach to Soil Conservation," described the various presentations from farmers and researchers. Over 150 participants heard farmers Les Potter from Gull Lake and Claude Carles from Radville stress the importance of keeping good records to help make decisions about any farm enterprise. Jim Halford from Indian Head explained how selective herbicides can be used for weed control. He stressed the importance of correct rates and timely applications. Ken Allport from Agricultural District #40 Save Our Soils Project and Dale Fyke from the District #11 Save Our Soils Project emphasized the need for a systems approach to maintain trash cover on summerfallow to prevent erosion.

Two researchers — Dr. E. de Jong from the University of Saskatchewan and Dr. Guy Lafond from Agriculture Canada at Indian Head — spoke on the importance of considering all farm operations. They emphasized the importance of a variable cropping system to allow for flexibility depending upon conditions such as moisture, crop prices and available markets.

Keynote speaker Lorne Hehn, Vice President of Conservation Canada, spoke to the delegates. He emphasized the importance of involving all groups in promoting soil conservation. Mr. Hehn told the delegates that producers and consumers alike must be made aware of the importance of conservation and the prevention of further soil degradation.

Luncheon speaker Dr Harry Hill, Director General of P F R A, who is on leave to head up the new Conservation Program of Agriculture Canada, outlined new initiatives that are being introduced to promote soil conservation. Dr. Hill indicted that there would be funds available on a cost-sharing basis with provinces. These funds will be available for special conservation projects.

President Brett Meinert of Shaunavon spoke to the delegates at the annual meeting. He reported that the SSCA was formed to provide a provincial organization dedicated to encourage soil conservation by promoting crop production systems which reduce soil degradation and maintain economic viability. Association manager Glen Hass from the University of Saskatchewan presented the constitution to the delegates.

The Association has over 150 full farmer members, 30 associate members and 12 supporting members. SSCA has six regions and will hold its first elections in the fall of 1988. Elections will be held for six regional directors and a president elect. These positions will be filled by full members in the Association. Anyone interested in helping promote soil conservation should become a member of SSCA. The membership fee is $30.00 annually. For more information contact Glen Hass, Room 110 Kirk Hall, University of Saskatchewan S7N 0W0, telephone 966-5550.

Election of New Board of Directors

At the annual meeting of SSCA, a motion was passed to have the interim Board of Directors continue until December 31, 1988. This would allow elections to be held as outlined in the constitution. This will require elections in all of the six regions. Three will be for a two-year term and three for a one-year term. As well there will be

elections held for a new president and for a president-elect. All of these are to be selected from the full members of SSCA. More detail will be provided in the next newsletter but if you are interested in being a director or president or if you know someone who is, their names can be forwarded to Glen Hass, the Manager of SSCA, at any time. Present board members are eligible for re-election but a new president must be selected for 1989.

The Saskatchewan Soil Conservation Association is a new organization that has an important role to play in advising and guiding those responsible for soil conservation in Saskatchewan.

SASKATCHEWAN SOIL CONSERVATION BOARD OF DIRECTORS

Brett Meinert, **President,** Box 1438, Shaunavon S0N 2M0

Ron Alton, Director North East, Box 609, Carrot River S0E 0L0

Terry Switenky, Director North East, R.R.#2, Site 6, Box 370, Prince Albert S6V 5P9

Ken Duke, Director South East, General Delivery, Langbank.S0G 2X0

Hugh Schnell, Director South East, Box 64, Torquay S0C 2L0

Joe Holenski, Director South West, Box 304, Vanguard S0N 2V0

Ken Allport, Director West Central, Box 518, Kyle S0L 1T0

Dave Bueckert, Director West Central, Box 125, Tugaske S0H 4B0

Gary Schweitzer, Director West Central, Box 222, Eston S0L 1A0

Derryl Blackstock, Director North West, Box 101, Gallivan S0M 0X0

Rolf Hennig, Director North West, Box 416, Glaslyn S0M 0Y0

Fred Phillips, Director East Central, Box 1287, Yorkton S3N 2X3

Land Stewardship Program

The Ontario Ministry of Agriculture and Food (OMAF) has instigated a three-year, $40 million program to provide financial incentives for first-time adoption of conservation farming practices. This program was set in place as a response to widespread concern throughout the province relating to serious water and wind erosion.

The program is funded by OMAF and is available to individuals who are bona fide farmers, to corporations which have major interests in agriculture and to small land owners.

The Land Stewardship Incentive Program consists of four sections:

A. Soil Structure — Improvement and Maintenance

This section focuses on crop rotations, residue and crop cover, trees and stewardship lease. This latter category provides incentives to landlords to require tenants to farm their land in a conservation way.

B. Erosion Control Structures

This part of the program provides funding for municipal and local county projects which affect water drainage.

C. Conservation Equipment

This section provides funding to encourage the use, modification and adoption of equipment which will improve residual management.

D. Conservation Technology

This is to support the development of training courses relating to conservation practices, equipment design and utilization, and upgrading both farmers and technicians.

This program is a major commitment by OMAF to encourage soil conservation. SSCA may be well advised to learn more about this program to determine if a similar program might be integrated into Saskatchewan's conservation programs.

SOIL CONSERVATION IN SASKATCHEWAN

L.R. Gramiak, Soils and Crops Specialist, Extension Service, Saskatchewan Agriculture

Soils together with water constitute the most precious resources we have. The land and its soil stand at the base of the pyramid of life. Despite the relative importance of soil, this resource is degrading at an alarming rate. Evidence from recent studies indicates that the total on-farm costs of land degradation in Canada are between $750 million and $1.2 billion annually.

The major causes of land degradation in Saskatchewan are erosion by wind and water, soil salinity and organic matter loss.

Soil erosion results from the action of wind and water on an inadequately protected soil surface. The loss of one inch of topsoil can reduce yields by three to four bushels per acre. This is a permanent loss which will occur year after year. In addition to lost productivity, erosion causes crop injury by sandblasting young seedlings. Other costs associated with erosion include the use of heavy equipment in the removal of eroded soil from ditches.

Soil salinity is another form of land degradation. Estimates of the total amount of saline land in Saskatchewan vary widely, but all agree that at least several million acres are affected to some extent. Dryland salinity is a complex problem. Soil salinity is more a water problem than a soil problem. It is caused by high water tables. Dissolved salts move with the water into plant rooting zones and deprive plants of water. The salts actually prevent water and dissolved nutrients from entering the plant. Salts are then deposited on the surface as the water evaporates.

If the problem is complex, the solution is even more so. There are no magical cures for soil salinity. Water management is the key to controlling salinity. For many farmers complete reclamation of saline soil may not be possible. The best option, in many cases, may be to plant forages. Even if the forage is not harvested, it may at least allow travel over the area and reduce the unnecessary expenses of fuel, fertilizer and seed that are wasted in the hope of growing annual crops in these areas.

The most subtle form of soil degradation is organic matter loss. Early farmers recognized that soils with a high organic matter content produced good crops, the reason being that organic matter is a source of plant nutrients, improves soil structure, increases moisture infiltration capability and increases the water-holding capacity of soils.

Half of the original organic matter of our soils has been lost by summerfallowing and annual cropping. The result is lower productivity, reduced soil tilth and an increased dependency on commercial fertilizer.

Summerfallow and excessive tillage have been blamed for much of the soil degradation. Soil erosion can be reduced by decreasing the amount and the frequency of both summerfallow and tillage. These practices leave little, if any, crop residue on the soil surface, causing the soil to dry out faster and to be more susceptible to erosion. Erosion potential can be reduced by reducing the number of operations, selecting proper equipment and reducing operating speed and depth.

Summerfallow and intensive tillage accelerate the decomposition of organic matter. Part of the solution to organic matter loss lies in reduced summerfallow acres, reduced tillage and efficient fertilizer use.

Farmers in Saskatchewan are conservation-minded and have, for many years, utilized soil conservation practices such as shelterbelts, grassed waterways, strip cropping, legume plowdown and forages in rotation. More recently, practices such as reduced tillage, chemfallow, snow trapping, annual legumes and direct seeding have been adopted to reduce soil degradation. ■

Saskatchewan Soil Conservation Association

Newsletter Issue #2 July 1988

President's Message
Brett Meinert

Soil conservation given high priority by producer groups

The Saskatchewan Soil Conservation Association (SSCA) was formed to "encourage soil conservation by promoting crop production systems which reduce soil degradation and maintain economic viability."

Through the '70s and '80s, soil conservation has come to be seen as important throughout the Great Plains. Regionally or provincially based producer groups have formed in Alberta, Montana, Manitoba/North Dakota and, most recently, in Saskatchewan.

Provincial or state based organizations have uniquely advantaged positions when it comes to dealing with big government, big business, or international groups such as Ducks Unlimited.

The SSCA has supplied responsible members to the Soils Technical Committee of the ADF and to the Tillage and Special Soils Problems subcommittees of SACSA. It has responded to initiatives such as the PFRA draft for a Conservation Reserve and the SWP's Soil Conservation-Policy Options and Implications. As well, it has sent representation to meetings such as Dr. Art Olson's forum on Agricultural Research and Technology Transfer. Most of the directors of SSCA are involved on other levels in soil conservation organizations such as with the SOS program, the many PFRA conservation groups or with the University's Innovative Acres project.

It is the future intention of SSCA to provide:

1) an information forum--member to member, member to scientist, scientist to scientist--that hopefully will cover the province by the trickle-down effect .

2) a responsible body of conservation advice to policy makers who lack the practical knowledge of the farmer.

3) a body of farmers who not only are interested in research, but who also are willing to commit resources to further research and to cooperate with scientists.

4) a liaison between the various conservation efforts. People who talk to each other learn from each other, and that is needed if scarce resources are to be preserved.

5) further enthusiasm for the long-term conservation effort.

To ensure our long-term prosperity, we must continue to give soil conservation a high priority rating.

Your involvement, input, and active participation will be of benefit to present and future generations.

Nomintations are sought for board of directors of SSCA

The Saskatchewan Soil Conservation Association has become a viable and important organization for the promotion of soil conservation. For the past year an interim board of directors has taken responsibility for getting SSCA through the initial organizing phase. Now it's time to elect the new board of directors. The following points regarding specific positions should be considered carefully.

Director:

1. The constitution states that each director shall be elected for a two-year term. This first election will see three directors elected for one-year terms and three for two-year terms. Next year, directors will be elected for two-year terms in the regions which elected directors for one-year terms this year. This will provide

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continuity in subsequent years as there will always be three returning directors.

2. For this election the regions North East, West Central and South East will elect directors for one year. The North West, South West and East Central regions will elect directors for two years.

3. Any full member is eligible to become a director.

4. Nomination papers for a director must be signed by three full members resident in the region.

5. All nomination papers must be forwarded to the SSCA office by September 30, 1988.

6. Ballots will be forwarded to all regional full members by October 31, 1988.

7. All voting will be complete by December 31, 1988.

8. Only full members in each region are eligible to vote for the director of their region.

President:

1. The constitution states that the president-elect will automatically become president. However, because there is no president-elect as yet, an election must be held for president.

2. Brett Meinert has been president for the past year and has done a great job. He is not eligible for re-election as president.

3. Five full members must sign the nomination paper for the position of president. (These members don't have to be located within one region.)

4. The September 30, October 31 and December 31 dates apply in this case as well.

5. Full members from all regions will vote to determine the SSCA president.

President-elect:

1. The president-elect will assume the office of president at the annual meeting in 1990.

2. Nomination papers for the president-elect must be signed by five full members (not necessarily from one region).

3. The September 30, October 31 and December 31 dates apply.

4. All full members will have the opportunity to vote for the candidate for the office of president-elect.

NOTE: All present board members are eligible for election to the new board of directors, as are any other full members. Start now to make sure your region elects a strong director.

Send all signed nomination papers to:
SSCA Office, Room 110, Kirk Hall
University of Saskatchewan
Saskatoon, S7N 0W0

Indian Head Experimental Farm - Past, Present and Future

Experimental Farm continues its vital role in agriculture

by Dr. Guy P. Lafond

The Indian Head Experimental Farm played a crucial role in its early beginnings by providing technical assistance in both plant and animal husbandry to the new settlers. There was an abundance of rich fertile soil and some very eager and ambitious settlers ready to confront this new land.

The plowing of this new prairie soil resulted in the release of large amounts of nutrients capable of producing exceptional yields. It was quickly realized, however, that continuous cropping was not capable of sustaining economic yields. Consequently, the practice of summerfallow was adopted in order to correct the shortfalls of continuous cropping as it pertained to limited moisture, weed problems and a reduction in available nutrients. This provided a realistic solution to the settlers, ensuring their survival and some prosperity.

It soon became evident that this practice of summerfallow also had some serious shortcomings; the major one being that it left the soil vulnerable to wind and water erosion. The combination of limited moisture and high winds resulted in devastating scenes of wind erosion. It was realized that this removal of soil through wind erosion resulted in a net reduction in the productivity of the soil. The effects were not as dramatic on soils with thick topsoils, but on soils with thin layers of topsoil the reduction in productivity was more noticeable. Unfortunately, the options open to the settlers to correct this

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problem were virtually non- existent.

The P.F.R.A. Act, enacted in the '30s, set out to research practices that could correct some of the shortcomings experienced with summerfallow. Researchers like Ted McCurdy were hired to study these problems. After many years of research, corrective measures such as strip cropping and trash management were suggested. Interestingly enough, trash management represented the most feasible option for arresting wind erosion. Through experimentation and hard work it was concluded that if between 30 and 50 per cent of the trash could be maintained on the soil surface until after the seeding of the fallow fields, soil erosion could be reduced to negligible levels. Today, proper trash management is still the key to minimizing the devastating effects of wind erosion.

As years went by, the combination of basic and applied agronomic research, coupled with the technological developments of herbicides and inorganic chemical fertilizers, led to a renewed interest in continuous cropping. Not only could this enhance the productive potential of the land, it also provided a corrective measure to wind and water erosion. By continuous cropping, soil was vulnerable to wind and water erosion for much shorter periods of time than before. In theory, it sounded very good; in practise, shifting from a fallow cropping system to a continuous cropping system represented a huge leap of faith. Shortcomings were also identified with this system; the major one being weed control. The registration of 2,4-D did not protect the farmer against wild oat and other grassy weed infestations.

The Indian Head Experimental Farm showed much foresight by initiating a study in 1947 to examine the long-term effects of 2,4-D on soil and on crop production. Forty years after its inception, the study is still undergoing scientific investigation and is the only one of its kind in North America and possibly the world. Interestingly enough, 40 years of continual 2,4-D use has not resulted in a reduction of crop yields or an accumulation in the soil. The microflora in the soil is capable of breaking down the chemical.

The investigation of continuous cropping led to the question of how crop rotations would affect productivity. In 1957, Ted McCurdy and Ed Spratt, two researchers at the Indian Head Experimental Farm, initiated a study which involved 14 different rotations. Some rotations included continuous cropping, with and without fertilizers; two- and three-year wheat fallow rotations; rotations with green manure crops; forage crops; and some mixed continuous cropping rotations with wheat, barley and flax.

After 30 years of existence, the economics and long-term productivity of these rotations have been studied and published. Currently, we are busy investigating how these rotations affect various physical and chemical parameters of the soil. The most interesting finding at present is that organic carbon (C) and organic nitrogen (N) were highest in the continuous wheat treatments and the treatments with forages included. Organic C and N decreased as the frequency of fallow increased. The levels of organic C and N are good indicators of the fertility of the soil and also the nutrient supplying power of the soil.

It was also found that the properly fertilized continuous cropping rotations responded much better to added inorganic nutrients than rotations that were not fertilized properly and/or included fallowing in them. This is a good indication that proper crop management combined with proper fertilizer management can ensure long term fertility of the soil.

Present:

In 1988, we are still faced with the problem of soil degradation and soil erosion. We have a much better understanding of the processes involved with soil degradation and also a better understanding of the impact of soil erosion. We know what practices encourage these problems and what can alleviate them. However, what we don't know is how to integrate all of this information into a comprehensive production package. This is essential if we want farmers to make changes in their production practices. Farmers should be given all the pros and cons of these new crop production systems and a list of possible remedies should problems arise.

The ability to predict possible problems requires that a systems approach to

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research be adopted. This is the approach that is currently being employed at the Indian Head Experimental Farm. A new 12-year study was initiated in 1986-87.

The main objective of this study is to examine in as much detail as possible, the interaction of tillage systems (zero, minimum and conventional tillage) with various crop rotations. Three four-year rotations will be used. The first rotation includes fallow, spring wheat, spring wheat, winter wheat. The second rotation includes spring wheat, spring wheat, flax, winter wheat; and the third, spring wheat, flax, winter wheat and field peas.

Detailed studies will be made on soil fertility, leaf and root diseases, soil-plant water relationships, plant development, weed control and changes in weed populations. These measurements should permit us to identify potential problems arising from shifts in tillage systems. As problems are encountered, new research projects will be initiated to address these problems.

Other facets of agriculture are also making significant contributions to crop production. Plant breeding is still a vital component and current varieties seem better suited because of their shorter stature (for reducing lodging) and their improved disease resistance. It is well recognized that our modern varieties have higher water use efficiency than the older varieties. This means that more grain can be produced on a given unit of water, providing the nutrient requirements are satisfied.

Dramatic changes and innovations in machinery designs have made the adoption of new tillage practices more feasible. Airseeders can now till, seed and fertilize all in one pass, minimizing unnecessary tillage operations. This new technology conserves soil moisture and theoretically should lead to improved plant establishment and yields. There is a pressing need to look at concepts such as seeding rates and row spacings in a variety of crops. The Experimental Farm is in the process of developing a plot seeder for this purpose and new projects will be initiated in 1989 to study these concepts.

There is always interest in alternate crops and part of the mandate of the special crops agronomist, Doug Derksen, is to develop integrated weed control strategies for these new crops. These strategies include crop rotations, tillage and/or herbicide treatments. Other important work being carried out by his section is recropping. This involves the investigation of herbicide use on subsequent crops under various tillage systems. With changes in tillage systems, use of certain herbicides to control weeds will increase and consequently there is an urgent need for this information.

Changes in tillage systems can also mean changes in the spectrum of weeds, especially perennial weeds such as quack grass. A study was initiated by Doug Derksen in 1986 to address this problem. A systems approach is also being used in this investigation. This involves determining how tillage systems, crop rotations and herbicides affect quack grass growth and development. Hopefully strategies can be formulated for more effective control of this weed.

The Indian Head Experimental Farm is also responsible for maintaining, increasing and distributing breeder stock of old and newly released varieties produced by Agriculture Canada plant breeders. Depending on the crop and varieties, the increase is either done at Indian Head or contracted to individual seed growers in Western Canada.

Future:

It seems to be getting more difficult every year to predict overall trends in agriculture and agricultural research. However, the Indian Head Experimental Farm is committed to the development of crop production systems that directly address the problems of soil degradation and soil erosion. This commitment will more than likely span the next decade. It is quite likely that as our knowledge of these systems expand, shifts in research emphasis may occur. But regardless of these shifts, our goal will still involve the improvement of these novel crop production systems. We are optimistic that the Indian Head Experimental Farm can regain its status as a leader in Agricultural Research.

We encourage the local producers and producers in southeastern Saskatchewan to attend our field days so that they can get a better appreciation and understanding of agricultural research.

Soil conservationists take message to local schools

During National Soil Conservation Week, April 11 to 17, Vasile Klaassen, PFRA's Area Soil Conservationist in Weyburn, spent one day at the Torquay school informing the students about soil conservation issues. She used a variety of demonstrations, activities and films to get the soil conservation message across to all different grade levels.

Response from the students and staff was enthusiastic and Mrs. Klaassen was asked by one of the teachers to take the children out for a field trip in June. This one-day event was a pilot project for Mrs. Klaassen and she now hopes to make school visits a regular part of her busy work schedule.

Dave Bueckert, a director from the West Central region of SSCA, also visited several schools in his region. Dave indicated that the enthusiasm was high and both teachers and students were interested in receiving more information relating to soil conservation.

Symposium to focus on land and water management

A Prairie and Northern Region Symposium will be held November 8 and 9, 1988, at the University of Regina.

The keynote address will be made by Dr. Harry M. Hill, PFRA, who will speak on *Integration of Land and Water Use.*

The purpose of the symposium is to focus on the interactions pertaining to land and water management which affect the biologically rich, but sensitive, transitions between dryland and open water. These zones offer important challenges in wise use. Careful management can change their status from marginal to prime use. This symposium will offer a better understanding of the bio-physical nature of these transitions and the consequences of various management options.

The symmposim is sponsored by the Water Studies Institute and the Canadian Plains Research Center.

For more information contact Mr. G. Sephton, symposium chairman, at (306) 780-5104, Regina.

Coming Events

Date/Time	Event and Location	Contact
July 14	Kindersley Soil Conservation and Pulse Crops Tour	Barry Rapp 463-2696
July 14	Estevan Soil Conservation Tour	634-5637
July 15 10 a.m.	Saskatchewan Irrigation Development Centre Open House, Outlook	867-9951
July 19	Davidson Soil Conservation Tour	567-2806
July 20	Wheatland Conservation Area Tour Swift Current Area	Dean Smith 773-9029
July 20	Scott Research Station Field Day	247-2011
July 22 9 a.m.	Alfalfa Seed and Leafcutter Bee Tour Don Swenson Farm Moose Jaw Area	787-7712
July 22 7:30 p.m.	Saskatchewan Forage Council Annual Meeting, Moose Jaw	787-7712
July 23 9:30 a.m.	Moose Jaw Area Forage Tour	787-7712

Residue conservation important for areas with light crops

In a year with light crops in most areas of the province, farmers must maintain as much trash on their fields as possible. The following table provides information relating to residue conservation with various tillage implements.

Residue Conservation with Various Tillage Implements

Tillage Implements	Residue Reduction By Each Operation (%)	Residue Conserved After 4 Operations (%)
Wide blade cultivator (90 cm or 35 in. sweeps)	10	50 - 60
Rod Weeder	5 - 10	no data
Heavy duty cultivator (40-45 cm or 16-18 in. sweeps)	20	30 - 40
Heavy duty cultivator with rodweeder	20	30 - 40
Heavy duty cultivator with harrows	40	15 - 20
Field cultivator (25-30 cm or 9-12 in. sweeps)	20	30 - 40
Field cultivator with harrows	40	15 - 20
Discer	35 - 65	10 - 15
Tandem disc-offset disc	30 - 70	5 - 15
Moldboard plow	90	no data

Source: Scott, Swift Current and Lethbridge Research Stations.

SSCA members are invited to submit articles for the next newsletter to Glen Hass, Rm 110 Kirk Hall, Division of Extension and Community Relations, University of Saskatchewan, Saskatoon, S7N 0W0.

NEWSLETTER
SASKATCHEWAN SOIL CONSERVATION ASSOCIATION

Issue #3

February 1989

President's Message
Greetings to you all!

After the summer of 1988, conservation must be high on the priority list for many. With low moisture levels for cropping and limited trash covering our summerfallow, the options are limited.

Our convention topic, Another Look at Summerfallow, is more important than ever to the producers of the province. I wish to welcome you to our convention. Hopefully you will return home better armed to cope with the tough conditions which exist in much of our Saskatchewan cropland.

Your executive is spending a great deal of time in support of the effort for soil conservation in the province. We are concerned about the future of the Conservation Reserve Program, the Canadian Soils and Water Accord, the SOS Program, and indeed the very existence of the P.F.R.A. Conservation Groups. Major changes are occurring at the agriculture district board level which have implications for all conservation activities of the province. I feel that S.S.C.A. must have input to the federal and provincial authorities in this time of major change.

Once again welcome to our convention in Swift Current. Please remember to renew your membership for 1989.

And remember conservation is the key to our future.

L. Brett Meinert

L. Brett Meinert
President, S.S.C.A.

Members of SSCA are invited to submit articles for publication in our newsletter to Glen Hass, Rm, 110 Kirk Hall, Division of Extension and Community Relations, University of Saskatchewan S7N 0W0.

ANOTHER LOOK AT SUMMERFALLOW

The Saskatchewan Soil Conservation Association (SSCA) will be holding its annual conference in Swift Current on February 20 and 21. The theme for this year's conference is Another Look at Summerfallow. Because of the severe

drought of the past year, most of the acres that will be summerfallowed in 1989 will be very susceptible to wind erosion. The conference will focus on ways to reduce the risk of wind erosion on summerfallow fields. Featured speakers will include Don Rennie, Dean of the College of Agriculture, University of Saskatchewan, Don Flaten, Director of the School of Agriculture, University of Manitoba, Dr. Harry Hill, Executive Deputy General, National Soil Conservation Program, and John Kiss, Provincial Soils Specialist. Speakers from Agriculture Canada, the University of Saskatchewan, industry and the farm sector will present practical information relating to the conference theme. The conference will also feature the announcement of the conservation award winners and the presentation of the SSCA logo. This is an event that will be important to all producers as they plan their summerfallow program.

NEW ALBERTA SOIL CONSERVATION ACT

Agriculture Minister Peter Elzinga announced the proclamation of Alberta's new Soil Conservation Act on September 26, 1988. The intent of the Act is to provide a framework for encouraging sound soil conservation practices in the province, to preserve Alberta's agricultural land base, and ensure that the farming sector can sustain its current levels of productivity. The Act was introduced to the legislature as Bill 37 by Chinook MLA Shirley McClellan last May, and received Royal Assent July 6, 1988. It replaces a previous Soil Conservation Act that had been in effect with little amendment since 1962.

The new Act differs from the old in many key respects. Changes were made in response to requests received from the public and from local authorities over a period of years and are aimed at reducing soil degradation and losses by strengthening and clarifying the provincial legislation. The changes clarify the soil conservation responsibilities of local authorities, land owners and occupants, giving well-defined powers to local authorities to take action when needed to combat soil loss and soil deterioration. With the legislation, stiffer penalties for failure to comply with the Soil Conservation Act have been introduced. The penalty for contravening any provision of the Act has been increased to a maximum of $5,000 from a previous maximum of $200.

SOIL CONSERVATION AWARDS

Two soil conservation awards are presented annually by the Saskatchewan Soil Conservation Association.

The Association is concerned about the increasing problem of soil erosion. The S.S.C.A. is helping to develop educational programs with other groups and to organize special activities of its own. It also contributes to various advisory committees. The Association believes that a united effort can and will reduce soil erosion.

The S.S.C.A. realizes that individual farmers and groups of farmers are providing innovative approaches to soil conservation. To recognize their efforts and leadership and thereby motivate others to become conservationists, two conservation

awards will be presented annually. The two awards, THE CONSERVATION FARMER AWARD and THE GROUP CONSERVATION AWARD, are sponsored by *the Western Producer*.

The Awards:

I. CONSERVATION FARMER AWARD:
Purpose: To recognize outstanding achievement in soil conservation by a Saskatchewan farmer.

II. GROUP CONSERVATION AWARD:
Purpose: To recognize outstanding support for soil conservation by a Saskatchewan group. Groups may include communities, agricultural districts, agricultural societies, and local organizations. Provincial groups or special interest groups are not eligible.

SASKATCHEWAN SOIL CONSERVATION BOARD OF DIRECTORS 1989

Brett Meinert, **President**, Box 1438, Shaunavon S0N 2M0

Ken Allport, President Elect, Box 518, Kyle S0L 1T0

Derryl Blackstock, Director North West, Box 101, Gallivan S0M 0X0

Dave Bueckert, Director West Central, Box 125, Tugaske S0H 4B0

Gerald Girodat, Director South West, Box 664, Shaunavon S0N 2M0

Gerald Willerth, Director South East, Box 308, Indian Head, S0G 2K0

Fred Phillips, Director East Central, Box 1287, Yorkton S3N 2X3

Terry Switenky, Director North East, R.R. #2, Site 6, Box 370, Prince Albert S6V 5P9

1989 MEMBERSHIP FEES ARE DUE!

During the past year S.S.C.A. has been an active organization. Board members have attended many meetings throughout the province to represent the organization and promote soil conservation. They have also been represented on the provincial government's Drought Committee, the Saskatchewan Advisory Council on Agriculture Extension, Saskatchewan Advisory Council on Crops, the Saskatchewan Advisory Council on Crop Protection, the Saskatchewan Forage Council, and the Advisory Board of the Swift Current Experimental Research Station. As well, the board has met with Saskatchewan Crop Insurance and the Saskatchewan Forestry Association. The board has also made representation to the provincial Departments of Agriculture and Education and to the Premier's office. This has kept the board members very busy!

Important issues that will be discussed by the board members in the months ahead are the proposed federal-provincial water and soils accord, the National Soil Conservation Program, changes in the crop insurance program, and general drought assistance programs.

The S.S.C.A. needs more members. The goal of the organization is to have 1000 conservation-minded farmers as active and interested members. At present there are only 200 members. If each member can recruit just five more members the goal will be reached. Saskatchewan has 60,000 farmers — there must be at least 1000 who are concerned enough to be members! This representation is important so that the board members of S.S.C.A. can speak for producers who believe in soil conservation.

IMPORTANT EVENTS

Manitoba — North Dakota Zero Tillage Workshop, January 23-24, Winnipeg Convention Centre.

Soils and Crops Workshop — "Soil Degradation: Reappraisal and Future Consideration," February 16-17, the University of Saskatchewan.

S.S.C.A. Workshop and Annual Meeting — "Another Look at Summerfallow," February 20-21, Swift Current.

Prairie Barley Symposium, March 21-22, Saskatoon.

Crop Market Prospects '89 — satellite delivery of up-to-date information and market outlook for all grains.

Conservation Conference, November 1-3, Saskatoon Inn.

DID YOU KNOW THAT- -

1. Soil makes up the outermost layer of our planet.
2. Natural processes can take 300 years to form one inch of top soil.
3. Fungi and bacteria help break down organic matter in the soil.
4. Roots loosen the soil and allow oxygen to penetrate. This is beneficial to the animals living in the soil.
5. Roots hold soil together and help prevent erosion.
6. An average soil sample is 45% minerals, 25% water, 25% air, and 5% organic matter.
7. Five to ten tons of animal life can live in an acre of soil.
8. Different-sized mineral particles such as sand, silt, and clay give soil texture.
9. Five tons of topsoil spread over an acre is as thick as a dime.

Before widespread agricultural production on the prairie began, soil erosion was a relatively slow process. The prairie vegetation, comprised mainly of grasses, provided a blanket of protection over the soil surface. With the adoption of European agriculture practices on the prairie, the soil was broken, leaving it bare and vulnerable to erosion.

Producers and governments alike quickly recognized that erosion was a widespread and growing problem, especially during dry years. This fact was very evident during the so called "dirty thirties". As a result, farming practices began to change. Strip cropping was adopted and producers paid more attention to the way they worked the land.

In 1935 the Prairie Farm Rehabilitation Act (PFRA) was passed to address the soil degradation problem on the prairies. It was at this time that federally funded PFRA personnel and Shelterbelt Centre staff first began to promote field shelterbelts as a soil conservation measure.

From the first time trees for shelterbelts were promoted in 1935, shelterbelts have proven their worth as a soil conservation tool. The reduction in wind erosion is the most obvious advantage of planting field shelterbelts. The soil is protected in an area equal to at least ten times the height of the trees in the shelterbelt. Soil without crop growth or adequate crop residue would be protected over this area. Young seedlings in this area are also protected from the sand blasting effects of drifting soil. Therefore, crop seedlings have a better chance of covering the soil and providing protection against erosion.

A less obvious benefit of field shelterbelts is the fact that they actually retain soil moisture. By reducing wind speeds, the drying effect on both soil and the crop is decreased. Shelterbelts also catch snow during winter months. If the shelterbelt is designed correctly, the snow can be spread relatively evenly across a field providing necessary moisture in the spring.

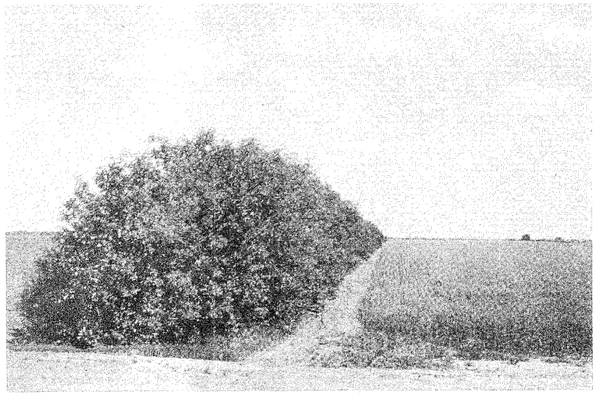
Currently recommended shelterbelt species use minimal moisture from the adjacent cropped area, since their root systems do not extend any great distance laterally. Generally, a loss in crop production potential will only occur in an area adjacent to the shelterbelt that is equal to the actual height of the trees. A more than offsetting increase in crop production occurs in the area equal to approximately fifteen times the height of the trees. Shelterbelts more than make up for the moisture they use. Yield tests have proven this fact.

Another benefit of shelterbelts is the wildlife advantage they provide. Several shelterbelt species are especially suited for wildlife. These include Buffaloberry, Chokecherry, Siberian Crabapple and Russian Olive. Shelterbelt species which provide dense cover at ground level or those species which provide a food source are beneficial to wildlife.

Some of these species can be incorporated into a regular shelterbelt at regular intervals. The double rows of shelterbelts and block plantings of trees encouraged through the Save Our Soils Program will obviously benefit wildlife through enhanced habitat. The new approach to conservation is an all encompassing approach which addresses concerns for agriculture, the environment and wildlife.

Shelterbelts are both environmentally and wildlife friendly as well as aesthetically pleasing. Field shelterbelts can be thought of as a "biological control" for wind erosion. As we are finding out more and more, the best solutions to many of our problems can be found by working with nature and not against it. Field shelterbelts are a good example of this.

The new Save Our Soils (SOS) program, implemented jointly by provincial and federal governments, has recognized the value of field shelterbelts. Local Agriculture, Development and Diversification (ADD) Boards receive funding from the Agriculture Development Fund (ADF) for the establishment and maintainence of shelterbelts over the next three years. The total amount of



ADF shelterbelts funding to ADD Boards is based on district size and the area of highly erodible land. Maximum shelterbelts allocations are $150 per mile of shelterbelts established and $80 per mile each year for two years of maintenance.

The flexibility of the SOS program allows the ADD Boards to run their own local program under broad-based guidelines. This will mean that the local producer driven ADD Board can use funds to purchase equipment, contract out various services or simply turn the funding over to individual farmers.

In most cases, the larger ADD Boards see the benefits of a locally organized program with services being provided locally. Although the funding the individual farmers receive will be reduced if equipment or services are provided, this flexibility should be more acceptable on the basis of convenience and efficiency.

With the SOS program now in place we should see a major increase in the numbers of field shelterbelts established. If you are interested in establishing field shelterbelts on your farm, contact your local ADD Board Soil Conservation Technician or Extension Agrologist.

Along with the land, producers can also pass along a sound land management ethic to the next generation. Field shelterbelts are a long term soil conservation practice that will be in place for many years. They can be seen as a commitment to our land resource, as well as a commitment to our future in agriculture and the future of following generations of Canadians.

Chris Ruschkowski
Soil Conservation Specialist, SSCA

Management that promotes vigorous plant communities and good soil cover is the best protection against grassland soil degradation and loss of productivity.

On native rangelands, this means maintaining a diverse community of perennial grasses and shrubs capable of binding the soil, trapping rainfall and adding to soil organic matter. On seeded pasture, it means using management practices that promote seedling establishment and healthy root systems to support perennial growth and build soil fertility.

Grassland deterioration is largely the result of overgrazing. As productive perennial plants are grazed out of a community, the soil is left bare and exposed. Roots no longer bind the soil or contribute to organic matter build-up. The effects can be far-reaching.

A decrease in livestock carrying capacity and wildlife habitat are the most noticeable effects. Less evident is the increased rate of soil erosion and the loss of watershed stability. There is little protective vegetation to trap rainfall and allow for infiltration into the soil. Ground water reservoirs are not recharged. Water runs off, carrying with it tiny soil particles.

Replenishment of lost soil is a slow process. Several hundred years are required to form an inch of soil. Loss of soil from grazing lands results in nearly permanent reductions in productivity. Overgrazing also accentuates drought conditions. Removal of protective surface litter allows soil temperatures and evaporation to increase, leaving less water available for plant growth. Plants weakened by overgrazing develop shallow root systems dependent on surface moisture.

How do managers maintain healthy plant cover and use grasslands at the same time? Effective range management relies on control and use of the grazing animal. The agricultural practices we have developed for cropland are often not suitable for grassland situations. Because grasslands are complex ecosystems rather than single crops, application of herbicides, fertilizers and mechanical treatments often meet with limited success. Problems are temporarily masked, only to reappear in a few years.

As simple as it seems, manipulation of livestock grazing is the best way to achieve long-term results. The plants, animals and soils making up the grassland ecosystem need to be managed as a unit rather than in isolation. They are interdependent and interrelated. Well planned and managed grazing systems allow producers to manipulate livestock grazing to achieve sustained productivity.

For grazing management to succeed there are five important rules to keep in mind: do not exceed recommended stocking rates; distribute livestock as evenly as possible; graze at the proper time of year; provide periods of rest during the growing season for plant recovery; and maintain an adequate layer of protective litter.

The rewards of proper grazing management are higher forage production and less variation in the forage crop between years due to increased soil protection, soil moisture and mineral supplies available for plant growth. Increased water supplies are an added bonus. I will quote a case history from Texas. In the early 1960's, landowners of five ranches covering about half of the West Rocky Creek watershed in Texas began extensive range management improvements. The ranchers enhanced grass cover and managed grazing more closely. Carrying capacities increased and by 1970, springs that had been dormant since the 1930's began to flow on all five ranches. West Rocky Creek now supplies about 7 percent of the municipal water supply for San Angelo, 20 miles away.

Whether your piece of grassland is 10 acres or 1000 acres in size, maintaining a healthy plant community is the key to sustained productivity and soil conservation. Management strategies to achieve this goal need not be expensive or complicated. Your grassland is a renewable resource — shouldn't you keep it that way?

Nancy Fraser
Soil Conservation Specialist, SSCA

Global Agricultural Technology Exposition
June 7, 8 and 9, 1990
Location: Saskatoon
Call: G.A.T.E. 975-1182

The G.A.T.E. Public Lecture
One of a series of topics for the general public, farmers and students.
June 7, 1990
Location: Saskatoon
Call: G.A.T.E. 975-1182

Termuende Research Farm — Field Day
June 13, 1990
Location: Lanigan, Saskatchewan
Call: Dr. Roger Cohen, University of Saskatchewan 966-4134

Society for Range Management — Summer Tour and Meeting
June 18-20, 1990
Location: Moose Mountain Provincial Park — Kenosee Lake, Saskatchewan
Call: Nancy Fraser (SSCA) 787-0554 or Orville Myrvang (Lands Branch) 787-5272

Air Seeding '90 — An International Conference
June 19-21, 1990
Location: Regina, Saskatchewan
Call: Bruce Hobin, University of Saskatchewan 966-5551

Canada-Saskatchewan Agreement on Soil Conservation

Melfort Research Station — Beef/Forage Research Field Day
June 27, 1990
Location: Melfort Agriculture Canada Research Station, Melfort, Saskatchewan
Call: Harmon Davidson, Director 752-2776

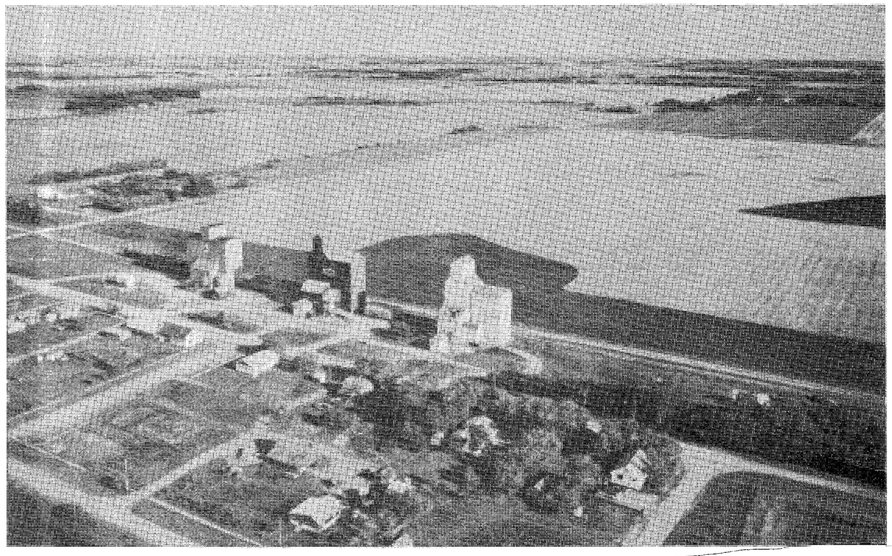
Scott Experimental Farm Field Day
July 18, 1990
Location: Scott, Saskatchewan
Call: Ken Kirkland, Experimental Farm 247-2011

Crop Science/Plant Ecology Department Field Day — U of S
"Weeds/Agronomy"
July 17, 1990
Location: University of Saskatchewan
Call: 966-4944

RECYCLED PAPER

Spring 1990

The Newsletter of the Saskatchewan Soil Conservation Association Inc.



Welcome to the Spring 1990 edition of the Prairie Steward, the Newsletter of the Saskatchewan Soil Conservation Association Inc. As the new President of the SSCA, I am pleased to say that the conservation program in Saskatchewan is off with a full head of steam. My thanks and congratulations to Brett Meinert, the Past President, for a job well done. As a major conservation organization in Canada, the SSCA is in great shape and has an exciting future ahead of it.

For those who weren't able to attend the SSCA Annual Meeting in Yorkton this past February, we had a great time and a good producer turnout. It is encouraging to see strong membership support. On behalf of the SSCA Membership I would like to thank Grant McCallum and Dave Struthers for their time and energies in organizing the Yorkton meeting. Thanks Grant and Dave for a job well done.

Around the SSCA offices in Regina and the regions, things are busy. Implementing a province-wide conservation program is a big job. SSCA staff are working as part of the Canada-Saskatchewan Agreement on Soil Conservation to help ADD Boards and producers organize local programs. If you need technical assistance in getting a conservation program started on your farm, be sure to give your ADD Board Soil Technician or the SSCA Regional Soil Conservationists a call. If they can't answer your questions themselves they can make sure a member of the Regional Conservation Team, who has the answer you need, gets back to you as soon as possible.

The SSCA Board has also been busy organizing and promoting the conservation needs of the SSCA Membership to government. March 8th to the 10th was the Soil Conservation Canada Annual Meeting in Winnipeg and on behalf of SSCA members, I informed conference delegates from across Canada that the SSCA was organized and active in Saskatchewan. From the presentations made in Winnipeg, Saskatchewan is the only province where producers, through the SSCA, are actively involved in the planning and implementation of conservation programs under the National Soil Conservation Program. It is clear that Saskatchewan producers are setting the pace for the rest of the country.

At the Winnipeg meetings the SSCA proposed that there be a joint annual meeting of the SSCA and Soil Conservation Canada in 1991 in Regina. Soil Conservation Canada was very enthusiastic about organizing a joint meeting and we are now in the process of planning for 1991. Mark the 1st and 2nd of March 1991 on your calendars now. This will again be Saskatchewan's chance to show the rest of the nation that Saskatchewan producers are leading the way in conserving our land resources.

In an effort to get producer representation in the planning of conservation programs, I am happy to announce that Gerald Willerth (SSCA Director Southeast Region) has been appointed to the Canada-Saskatchewan Implementation Committee. This government committee is responsible for the development of conservation programs under the $54 million Agreement on Soil Conservation.

Over the coming spring and summer the SSCA Board of Directors will be reviewing government policies which impact the ability of Saskatchewan producers to conserve the land resource for future farm families. In this review the SSCA Board will be adopting Position Statements which reflect the SSCA's view on conservation. I would like to take this opportunity to ask for your input on policy issues. Below I have listed some DRAFT Position Statements to give you some idea of the policies the Board is currently considering. If you have some thoughts on these or if you think we have overlooked an important issue, write to our Executive Manager or discuss it with your SSCA Regional Director before the end of June.

Position Statements Being Considered by the SSCA Board of Directors:

1. **The SSCA supports** SOIL CONSERVATION CANADA in its efforts to promote conservation within the national perspective.
2. **The SSCA believes** that the responsibility for the management of Saskatchewan's land resources must be an integrated and cooperative federal/provincial effort which recognizes Saskatchewan's constitutional jurisdiction over resource management.
3. **The SSCA believes** that producers are the "hands-on" stewards of our agricultural lands. The productivity of these lands benefits all of society by producing food and supporting local, provincial and national economies. Therefore, all members of society must share in the effort to ensure the future productivity of our land resource base.
4. **The SSCA believes** that soil, water, rangeland, wildlife habitat and agriculture are integral parts of our environment and must be managed in a cooperative manner.
5. **The SSCA believes** it is essential that the managers of the land resource, through relevant conservation organizations, be included in the consultative process to develop government policies and programs to conserve the land resource.
6. **The SSCA believes** that agricultural chemicals are, at present, necessary and can play an environmentally acceptable role when properly managed in most conservation farming systems.
7. **The SSCA supports** provincial and federal government action to remove conservation negative policies and programs or redesign them to be, at the very minimum, conservation neutral.

   For Example:
   i) consideration should be given to exclude marginal lands, lands where there is high risk of flooding and fragile soils, from benefits of certain agricultural support systems such as crop insurance and stabilization programs; and
   ii) the Canadian Wheat Board delivery quota system should be adjusted to ensure that it is conservation positive, and does not encourage inappropriate farming practices or land use.
8. **The SSCA believes** that general public awareness of the causes and costs of land degradation along with the benefits of conservation, is critical in the development of a strong soil and environmental conservation ethic within Saskatchewan and Canada. The SSCA supports the development of conservation education materials at all educational levels.
9. **The SSCA encourages** federal/provincial cost sharing for on-farm conservation demonstration programs. Such programs must fully address local community needs and priorities in order that ownership of such programs remains at the local level.
10. **The SSCA supports** the principle that skilled farm managers are the key to the adoption of conservation practices. Farm managers must have access to educational opportunities which enable them to better evaluate and choose new technologies, and to develop a management system appropriate to their soil and farm resources.

The SSCA Board has also opened discussions with agribusiness to explore opportunities for cooperation which will benefit SSCA members and conservation within the province. If you are an agribusiness member of the SSCA, we look forward to any ideas you may have on how you can cooperate with the SSCA to promote the conservation of the land resource.

The next few years are going to be exciting times for the SSCA and conservation within Saskatchewan. There has never been a better time to be an SSCA member.

Ken Allport
President, SSCA

In cooperation with the Agriculture Development Fund

Saskatchewan Soil Conservation Association Inc.

Head Office:
132-3085 Albert Street, Regina, Saskatchewan S4S 0B1
(306) 787-0558

Ken Allport, President, Kyle, 375-2691
Garry Schweitzer, President Elect, Eston, 962-4751
Brett Meinert, Past President, Shaunavon, 297-3159
Jim Laing, NW Director, Cut Knife, 398-2781
Terry Switenky, NE Director, Prince Albert, 764-4243
Dave Bueckert, WC Director, Tugaske, 759-2523
Fred Phillips, EC Director, Yorkton, 782-5265
Gerald Girodat, SW Director, Shaunavon, 297-2913
Gerry Willerth, SE Director, Indian Head, 695-2086

132-3085 Albert Street,
Regina, Saskatchewan S4S 0B1
(306) 787-0558

John J. Kiss, Executive Manager
Carolyn Fife, Office Manager

Soil Conservation Specialists
Nancy Fraser, Range and Pasture Management
Steve Paquette, Weed Control and Tillage
Chris Ruschkowski, Shelterbelts and Agronomy

Regional Soil Conservationists
Blair McClinton, North Battleford, 446-7646
Garry Meier, Tisdale, 873-2693
Garth Patterson, Saskatoon, 933-5287
Junaita Polegi, Yorkton, 786-1526
Pat Flaten, Swift Current, 778-8284
Bob Linnell, Weyburn, 848-2381

The new title of the Saskatchewan Soil Conservation Newsletter is the Prairie Steward. But, who are Prairie Stewards, and why are they concerned about the land resource?

Prairie Stewards are the producer membership of the SSCA who are farming the land to make a living, raise a family, live a rural life style and pass on the land their grandfathers passed to them. Prairie Stewards make a living from farming in every region of the province and live in centers such as Tisdale, Meota, Eston, Consul, Midale, and Ituna.

At times, farming is a classic love and hate relationship. When it rains at just the right time and in the right amount, everything is green and harvests are good. More often than not though, it is the poor conditions that prevail; drought, wind, hail, low prices, and occasionally too much rain at the wrong time of year.

Through all of the good and the bad times, it is the land with its soil, water, wildlife, scenery and hope that draws every prairie farmer back to the fields come spring. During drought and low prices you consider leaving the land and its frustrations and hardships, but down deep you know that spring will once again bring the hope of a land green and productive. Conserving the soil ensures the return to a productive land base after drought and flood.

From generation to generation farming the land shapes our lives and makes us what we are . . . Prairie Stewards. The SSCA is proud to represent the hard working farm family trying to make a living from the land today. We are all working to pass a fertile and productive land base on to our sons and daughters. This is why the SSCA was formed . . . to help producers conserve the soil resource for the sons and daughters of tomorrow.

Today, conservation of the environment is a major concern, not only in rural communities but in urban centers. The SSCA, through its membership, is working to develop conservation programs suited to the needs of Saskatchewan producers. Often this work means advising government on the direction of conservation programs aimed at producers.

Your strong and vocal support of the SSCA is the reason why Saskatchewan has taken a different approach to a publicly funded conservation program (the Canada-Saskatchewan Agreement on Soil Conservation). Saskatchewan is giving producers the ability to plan and implement a conservation program for their own land. Local planning is accomplished through ADD Boards, while provincial planning is coordinated by the SSCA. All members are encourged to take full advantage of this leadership opportunity.

The SSCA is actively promoting farm families as the "hands-on" stewards or managers of Saskatchewan's land resource. Their involvement in government programs aimed at land management is a must. Producers working with and assisting each other has bound rural communities together in the past and the SSCA is working to ensure that farm families will remain the decision-makers and stewards of the land.

Conservation of the agricultural land base in Saskatchewan requires cooperation and patience. The land degradation problem seen today did not develop overnight, and will not disappear tomorrow. Government policies, created decades ago, have contributed to the depletion of the soil. Today, these policies need to be reviewed and amended to ensure the viability of both the farm and the land. With your support the SSCA is actively promoting policy changes to conserve the soil and the farm way of life for future generations.

The land base that farm families rely on includes native rangeland, forage land, cultivated crop land, irrigated land and wildlife habitat. In order to conserve land we need to implement a coordinated and cooperative approach. This is why the SSCA is involved in Regional Conservation Teams and the Save Our Soils Program. The SSCA looks at land conservation from the producers' perspective and believes in an integrated effort to conserve all the land we depend on both for farming and for recreation. The SSCA is not only helping producers conserve land, but is also working to educate urban communities about the realities of farm production, land conservation and farm life.

Members of the SSCA are working hard, not only to keep their own farms alive for the future, but also to prove to governments that as the stewards of the land, producers must be involved in decisions which directly impact on their livelihood and future. I believe that this is why you are a member of the SSCA and a Prairie Steward. It is only with your support that the SSCA can continue to promote the need for all of society to share in the responsibility for conserving Saskatchewan's land resources.

If you have ideas about promoting conservation or wish to help the SSCA work with producers, teachers or school children, please give me a call.

John J. Kiss
Executive Manager, SSCA
(306) 787-0558

March 1, 1990

District #			
1	Carol Martin	Estevan	634-7959
2	Reg Mount	Assiniboia	642-3252
3	Dan MacDonald	Lafleche	472-3200
4	Trudi Dunham	Shaunavon	297-3097
5	Alan Stein	Moosomin	435-3972
6	Tracy Augdon	Fillmore	722-3866
7	Darren Hopkins	Weyburn	842-6055
8	Gordon Knight	Moose Jaw	693-3399
9	Scott Vance	Swift Current	778-8284
10	Al Holtemeyer	Maple Creek	662-2875
11	Dale Fyke	Sceptre	623-4210
12	Dave Lukash	Yorkton	782-0050
13	Dave Lukash	Yorkton	782-0050
14	Ernest Patrick	Regina	584-3895
15	Dave Bueckert	Tugaske	759-2523
16	John Harrington	Outlook	867-8441
17	Susan Speir	Brock	379-4303
18	Shaun Tomlin	Canora	563-4526
19	Evan Simpson	Theodore	647-2183
20	Ernest Patrick	Bank End	576-2165
21	Michael Zentner	Watson	287-3794
22	Bob Middleton	Saskatoon	931-9251
23	Ken Sapsford	Biggar	984-2666
24	Alex MacIntyre	Kerrobert	379-2132
25	Carl Ens	Hudson Bay	865-3059
26	Gordon Extrand	Melfort	752-5238
27	Raeleen Ingram	Melfort	752-5383
28	Brian Dinter	Saskatoon	654-4807
29	Donald Dyck	Borden	997-4532
30	Gordon Wallace	Unity	228-3601
31	Keith Head & Assoc.	Nipawin	862-4355
32	Wyett Meyers	Prince Albert	929-4946
33	David Christiansen	Canwood	468-2600
34	David Jensen	North Battleford	386-2593
35	Roland Brassard	Lloydminster	825-2547
36	Ron Johnson	Meadow Lake	236-6805
37	Gordon Gale	Southey	726-4569
38	Karen McCaffrey	Edam	397-2653
39	Tom McDougall	Lebret	332-4459
40	Ken Allport	Kyle	375-2691
41	Mary Cross	Alida	452-3509
42	Garry Paik	Porcupine Plain	886-2178
43	Bruce Elke	Jansen	364-4702

Saskatchewan farmlands are much more than a giant food factory. The landscape is a rich mixture of fields, pastures, woodlands, wetlands and native grasslands. This diversity produces a wealth of agricultural products and at the same time is home to an abundance of native vegetation and wildlife.

Good land stewards recognize that each part of the landscape has an important role to play in maintaining and sustaining the rural environment. Land unused for agriculture is not considered 'wasteland', but is valued for its role in a diverse landscape.

Unfortunately, we have been slow to see the need for a varied landscape. The Prairies have been undergoing a transition away from a stable diverse environment, toward a monoculture system.

Intensive cultivation has brought marginal lands into agricultural production. Resulting problems are soil compaction, reduced organic matter content, increased run-off, salinity and erosion. Wetlands have been drained to streams, causing downstream flooding, sedimentation and pollution.

The continuous harvest and export of produce has altered the natural balance of the prairie. Short-lived monocultures supported by chemical amendments, have replaced the natural habitat with annual crops. The food for naturally occurring organisms has disappeared and many predators and parasites that help control pest organisms have been reduced or eliminated. When natural allies are gone, we are forced to rely heavily on synthetic means to control crop pests.

The effect on wildlife populations is a sign of problems in our present agricultural system. Perhaps the most visible impact is the tremendous decrease in waterfowl populations — a big issue at Ducks Unlimited Canada.

Intensive grain production with its constant removal of habitat and destruction of nests has lead to severely reduced nesting success. In the 1930's, nest success rates in native farmland were consistently estimated at above 60 percent. In the 1980's, due largely to changes in agriculture, nest success has fallen to below 10 percent in many years. The result is a serious decline in waterfowl populations and a real fear that the trend will continue unless changes are made.

Many may feel that ducks are expendable and there is no cause for alarm, however, there is a growing feeling that the 'duck issue' is an early indicator of environmental problems that might threaten the agricultural industry itself. Present agriculture practices place stress on many other resources in addition to impacting wildlife. The quality of our human environment may be equally threatened by present production practices.

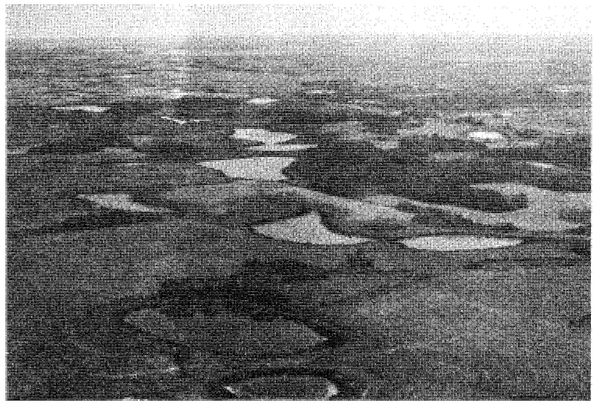
These trends of deterioration in the prairie landscape can be halted with slight changes in agricultural practices. However, the most important step is a change in objective. Good land stewardship needs to place agriculture as just one of the many uses of our landscape and bring agriculture back toward a better balance with nature. We need to utilize our soil and water resources for agricultural production without destroying the environment and depleting what is difficult to renew. We need to look at the Prairie landscape and see more than just farmland.

Agricultural practices for good land stewardship.

One of the first steps involved is the management of moisture. The objective is to capture the maximum amount of precipitation where it falls. Water is retained best in soils that have a good surface cover and high organic matter content. Moisture is then available for plant growth and any excess moisture can be dissipated in an orderly and non-disruptive manner.

Many economical techniques are effective in managing water and maintaining or increasing soil quality. Of equal importance is the benefit to wildlife that is not present when more traditional practices are used.

Herbicides can replace or eliminate tillage. Minimum till maintains straw cover on the soil. Direct seeding retains maximum residue on the soil surface and when combined with winter cereals, can maximize moisture utilization. Green manure legumes can replace traditional fallow. In addition, rotating forage with annual crops and improving grazing management to maintain healthy plant cover play a key role in managing moisture and soil quality.



A second step involves eliminating flooding problems by controlling run-off. Plant cover slows water movement and minimizes erosion but does not stop run-off. Run-off water collects in potholes and depressional areas and then percolates into the soil, recharging aquifers or eventually evaporating.

Although it is easy to see sloughs and potholes in terms of inconvenience and lost money, they are important natural storage areas that reduce flooding and erosion and retain sediments. As an added bonus, wetland vegetation filters organic compounds and chemical wastes from sediment.

Lee Moats
Provincial Agrologist
Ducks Unlimited Canada

The SSCA is currently working with Saskatchewan agribusiness to develop ways of jointly promoting the conservation of our land resource. As of April 1990, the following agribusiness groups are assisting SSCA members conserve soil by providing discounts on conservation products and/or services.

If you are a member of the SSCA, CANADIAN SEED COATERS LTD. will provide a discount of 7.5% on coated forage seed and a 5% discount on all other forage seed.

Contact Bruce Harrison
Canadian Seed Coaters Ltd.
P.O. Box 1748
North Battleford, Saskatchewan
S9A 3W2
(306) 445-1077 or 1-800-667-1326

Greetings from Jim Laing and Blair McClinton.

The north west region is comprised of 7 districts including Rosthern #29, Unity #30, Shellbrook #33, North Battleford #34, Lloydminster #35, Meadow Lake #36, and Turtleford #38.

In the past, soil conservation has not been a major issue with producers in the north west region. Recent drought and environmental concerns have brought the need for soil conservation to the farm gate. The Permanent Cover Program (PCP) and the Save Our Soils (SOS) Program are contributing to increased producer awareness.

The producer response to the PCP has been overwhelming. The PFRA regional office has received 430 applications from area producers. It is hoped that many of the producer applications not accepted by the PCP will be eligible for funding under the SOS Program and/or the Ducks Unlimited Prairie Care Program. The SOS Program is up and running in all 7 ADD Board districts and producer applications for conservation projects can be submitted to the ADD Boards on an ongoing basis.

The north west regional conservation plan has priorized conservation problems as: water erosion, wind erosion, low soil organic matter, acidic soils, soil salinity, and solonetzic soils. A large part of the region falls into priority areas for the North America Waterfowl Management Plan. The North West Regional Conservation Team (RCT) believes that soil conservation and wildlife habitat conservation could go hand-in-hand. We want to encourge producers to get involved, so if you have any ideas or questions give us a call.

The "Soil Conservation on Northern Soils Conference" held in Glaslyn on March 27 was a success. The RCT would like to promote better management of the grey wooded or luvisolic soils in the north west and this conference was a good start. Extra copies of conference proceedings are available from Blair.

Greetings from Gerry Willerth and Bob Linnell.

The region has seven ADD Board districts: #1 Estevan, #5 Moosomin, #6 Indian Head, #7 Weyburn, #14 Regina, #37 Strasbourg and #41 Carduff. All districts have a Save Our Soils (SOS) committee and Soil Conservation Technician in place and working hard to deliver the SOS Program. District proposals have been approved and implementation is beginning.

Conservation challenges include wind erosion, organic matter depletion, water erosion, solonetzic soils and saline soil development. A list of specific problems include residue management, large field size, high summerfallow proportions, soil incorporated crop protection products and water erosion in specific forms. The regional plan has also identified a number of resources that could be developed and expanded as opportunities to further soil conservation in the region.

Recommended practices include residue management, shelterbelt establishment and maintenance, strip cropping and reduced field widths, annual crop barrier strips, tillage alternatives and cropping practice adoption, green manure cropping, grassed waterways, minor water erosion control structures, on-farm demonstrations of conservation techniques, and pothole and permanent cover programs.

These practices are confirmed in the district plans as wind erosion control represents 29% of the total region budget, field shelterbelts 22%, water erosion control 5%, organic matter enhancement 4% and soil salinity programs 5%.

The south east region has a strong ADD Board Soil Technician contingent. Each has a recent degree or diploma in agriculture and an awareness of necessary programs. They also have the ability to work with individual producers and cooperators to implement district SOS plans.

Producer awareness and communication meetings continue to be held to inform rural municipalities, area initiators and organizations of the importance of soil conservation and how individuals can become involved and participate in a meaningful way on their own land.

The Regional Conservation Team and ADD Board Soil Technicians challenge each producer in the south east to implement a soil conservation project on his/her farm and to work together for the betterment of the land resource.

SSCA members are encouraged to contact at least two producers in their district, who they feel would benefit from a change in soil management practices. Introduce them to the district Soil Technician and encourage them to apply for a recognized project in soil conservation.

We look forward to your comments on how well a recognized conservation program is working, and welcome any new ideas for soil conservation practices that work for the preservation of our valuable soil resource.

Greetings from Fred Philips and Juanita Polegi.

Eight districts fall within the east central region: #12 Yorkton, #13 Melville, #18 Kamsack, #19 Canora, #20 Wynyard, #39 Fort' Qu'Appelle, #42 Kelvington and #43 Watrous.

Meetings, lively discussions and careful budgeting have resulted in the completion and approval of all 8 ADD Board soil conservation plans. As documented in the Regional Conservation Plan, most of the region has the potential for severe wind and water erosion and is subject to salinity. Loss of soil organic matter is also a concern.

Land degradation is affected by the continued destruction of natural bush and the draining of sloughs. The "new land" is usually marginally productive for annual grain cropping. Larger field sizes and the increased use of summerfallow also contribute to soil degradation. In 6 of the region's 8 districts, 17% to 28% of the land is summerfallowed annually. The climate and soils are suited to longer crop rotations and reduced summerfallow. A final problem is the practise of stubble burning. The need to burn residues can be overcome with proper chopping and spreading of straw at harvest.

The Regional Conservation Team (RCT) has had a number of meetings this year and has sponsored a Conservation Course for its districts' technicians, administrators and SOS committee members. The RCT is planning to set up a couple of conservation demonstration sites this spring.

If you are an SSCA member in the east central region and would like to become more involved in some of the regional activities, give either of us a call. Attending or speaking at meetings, cooperating with on-farm demonstrations and recruiting friends and neighbours as members of the SSCA, are ways in which you can do your part for the conservation effort.

Greetings from Dave Bueckert and Garth Patterson.

In the west central region there are 7 districts. They include Davidson #15, Outlook #16, Kindersley #17, Saskatoon #22, Biggar #23, Kerrobert #24, Rosetown #40.

All of the districts have had their Save Our Soils (SOS) Programs approved for funding. Producers interested in demonstrating a conservation practice on their farms should contact their local ADD Board Soil Technician.

The Regional Conservation Team (RCT) has prepared a conservation plan. The major soil degradation issues in the area are;

1) Wind Erosion,
2) Salinization, water erosion and soil organic matter loss,
3) Solonetzic soils and soil acidity.

Eleven R.M.s in the region have been identified as having high waterfowl production potential. Ducks Unlimited will be implementing their Prairie Care Program in these R.M.s this year. Prairie Care will provide financial support to implement various soil conservation projects. Some of the Prairie Care projects are similar to the conservation practices promoted under the SOS Program.

Erosion Control Practices Recommended by the RCT include:

1) Wind erosion control — Crop Residue Management (wide blade tillage, low crown sweeps, reduced tillage speed and depth, direct seeding, herbicide substitution, straw spreading and snow trapping) Strip Cropping, Shelterbelts and Grass or Annual Barrier Strips.
2) Water Erosion Control — Crop Residue Management, Grassing Field Gullies and Contour Strip Cropping.
3) Soil Organic Matter Enhancement — Forage Establishment.
4) Salinity Management — Forage Establishment.

Numerous farmer information meetings to promote the SOS Program have been carried out in all districts. Applications to demonstrate the above mentioned erosion control practices are now being received by the ADD Boards. The program has already been sold out in some west central districts. If you have not yet applied and are interested, contact your ADD Board Soil Technician soon.

Training sessions for Soil Technicians and ADD Board Secretary/Treasurers have been held and a wide blade clinic for ADD Board Soil Technicians and Extension Agrologists has been scheduled for early May. June and July will be active months with numerous field days and tours throughout the region. If you are interested in the events occurring this summer, give either of us a call.

Greetings from Terry Switenky and Garry Meier.

The north east region is comprised of 7 districts including Watson #21, Hudson Bay #25, Tisdale #26, Melfort #27, Wakaw #28, Carrot River #31, and Prince Albert #32.

Contrary to the popular opinion which seems to exist in other areas of Saskatchewan, the north east does indeed suffer all of the hardships that soil degradation can inflict upon producers. Wind erosion is a key concern in all of the ADD Board districts, followed closely by a concern for soil organic matter maintenance and water erosion.

Fortunately salinity concerns are confined primarily to the Watson District, in the area surrounding the Quill Lakes. Of course this is not fortunate for the producers of the Watson District.

Over the entire region, producers still have a window of opportunity to address soil conservation concerns before irreparable damage is done to our soil resource. Most of the concerns about soil conservation in the north east can be addressed through minor changes to production systems.

Producer and public awareness about soil conservation is probably as high now as it was in the dirty thirties. Soil blowing off black summerfallow and overworked stubble fields is noticeable to everyone in the area. Producers in the north east have historically been the leaders in adopting new technologies in crop production. Continuous cropping or extended rotations were widely accepted practices during the late 1970's and 1980's. However, it was this desire to extend rotations and increase productivity during the drier 1980's that in part is responsible for the recent farm and conservation related problems.

The challenge facing the Save Our Soils Program in the north east is to present economic alternatives to the overuse of tillage and to impress upon producers the need for improved residue management on their farms.

We encourage the SSCA membership and other producers to contact any of the staff people in the north east to discuss your conservation ideas and concerns. Individually, producers can make a difference in conserving the land resource of the province. Soil conservation is in our hands.

Greetings from Gerald Girodat and Pat Flaten.

Seven districts are included in the south west region: #2 and #3 Assiniboia, #4 Shaunavon, #8 Moose Jaw, #9 Swift Current, #10 Maple Creek and #11 Leader.

The Save Our Soils Program is well on the way in all districts. All of the ADD Board proposals have been accepted and the ADD Board Soil Technicians are now reviewing producer applications for conservation projects.

To date the most popular projects are residue management, forage establishment on saline and erodible soils and shelterbelt planting. Gully reshaping and grassing has sparked interest in Districts #2, #3 and #11. District #11 has shown significant interest in the establishment of crop strips to control wind erosion.

Deadlines for producer applications for projects this summer and fall are fast approaching. Those interested in applying for projects should contact their local ADD Board Soil Technician for more information.

The Regional Conservation Team has prepared a soil and wildlife conservation plan. The soils in the south west are mostly Brown and Dark Brown Chernozemic. Close to 80% of the soils have the potential for high or severe erosion. A high risk of salinity also exists for almost 40% of the south west.

A two year rotation of wheat and summerfallow is predominant. It is used as a means of storing soil moisture, controlling weeds, and releasing nitrogen from the soil organic matter. Summerfallow also provides the biggest challenge for soil conservationists, since excessive cultivation greatly increases wind and water erosion, salinity and the depletion of soil organic matter. Overgrazing of native rangelands in the region produces the same effects.

The strategy for conserving the land resource in the south west concentrates on promoting sound soil and land management under the Save Our Soils Program. On-farm conservation demonstrations through the ADD Boards will be the driving force in this effort. A salinity diagnosis and control program will be offered by the Wheatlands Soil Conservation Area Inc. (SSCA 1989 Group Conservation Award Winner) in cooperation with 6 of the region's ADD Boards and the PFRA.

The south west is an important area for upland game birds. Over 50% of the region is key habitat and is eligible for special wildlife shelterbelts or block tree planting. 14 R.M.s in the eastern part of the region (Missouri Coteau) also fall in the Prairie Care area of Ducks Unlimited and the North American Waterfowl Management Plan.

Now that the winter SOS meetings are over, summer will bring opportunities for district and regional tours. We also hope to organize some local coffee table meetings to discuss the "ins and outs" of specific conservation practices. If you have any ideas or need assistance give either of us a call.

"Agriculture has destroyed civilizations, wars have only altered them." Allan Savory, founder of the Centre for Holistic Resource Management (HRM), threw out this attention grabber at a recent HRM course in Lloydminster.

Entitled "New Ideas for Sustaining Farm Profits", families attended to hear answers to such questions as:

- How can I balance needs of farm, family, community and the environment?
- How can I plan for profit?
- Can environmentally sound farming be profitable?
- How do cropping practices make a difference in profitability?
- What is agriculture's "true capital"?
- How can I cut through the confusing array of research, views and methods emerging today?

Mr. Savory skilfully led us through group discussions to seek the answers ourselves. We spent the majority of time developing a simple 'thought model' which is the foundation for decision making under the Holistic Resource Management approach. The model can be used by anyone to solve management problems or to make management decisions that are economically, socially and environmentally sound.

Here are a few ideas that emerged over the three day course.

- Our world is desertifying. Desertification means a loss in diversity and mass. It leads to an increase in the severity and frequency of floods and drought and an increase in poverty. Sand dunes are a symptom in dry climates. Acid lakes, weed invasions, insect invasions, erosion, and monocultures are symptoms here.
- To be sustainable and profitable you need (1) clear GOALS, (2) consistent, good decisions and (3) a monitoring system.
- The goals of mainline agriculture conflict and are not sustainable. They are (1) production — often without regard to profit, (2) eradication of problem species, (3) preservation of beneficial species, and (4) problem solving.
- In our complex world goals need to be comprehensive or holistic to be achievable, rather than narrow and linear. Savory suggests a three part goal. First, describe the **Quality of Life** you want. This is very personal detailing family, community, church, and lifestyle relationships. Second, decide on what **Forms of Production** will support and sustain the Quality of Life you want. This part of the goal actually focuses on PROFIT from production rather than production per se. Finally, plan out the **Landscape Description** for your piece of land. How it will look in the future so as to support the Forms of Production and Quality of Life you have defined.
- To formulate this three part goal takes effort and time. The first step is to climb out of the mental rut many producers are in. There is a big difference in philosophy between someone who is a wheat farmer and someone who makes a profit from crops.
- The features of this three part goal are: (1) profit becomes a goal rather than a test used against production. (2) it bridges time with both immediate and long-term goals. (3) culture and agriculture are wrapped together. (4) contrary to the goals of mainline agriculture — there is no mention of problems. (5) there is no prejudice in the goal either against or for production methods.
- The ecosystem (our environment) needs to be thought of as interrelated processes rather than distinct and unique entities. We often think of plants, animals, soil, water, minerals etc. as isolated and functioning separately. In the real world they are all elaborately interconnected. To help in the thought model the ecosystem is divided into four foundation blocks that are interconnected PROCESSES: water cycle, mineral cycle, energy cycle and succession.
- We have to key in on the actual cause of problems rather than use crisis management on symptoms. For example, erosion is merely a SYMPTOM of a problem. We need to step back and identify why we have erosion in the first place and correct the problem at the source.
- Several principles for sustained cropping were identified.

Cover the soil at all times. Soil has to have a skin to stay alive. If you were skinned head to foot, medical science wouldn't have a hope of keeping you alive. Don't turn the soil upside down!

Create diversity and mass. Move away from monocultures and rotations of monocultures to intercropping, alley cropping and polyculture. Favour perennial crops. Use plants with a variety of root systems.

Reintroduce animals back into your farming practices and use measures to encourage wildlife which leads to stability.

- In a worldwide framework, North America has the best ratio of PRICE FOR PRODUCT: PRICE FOR INPUT. There is no reason why North America agriculture cannot be profitable. Most of our difficulties arise when we confuse 'price for inputs' with 'cost of production'. It is human nature to increase the costs of production as we get a higher price for production'.

I have not done justice to many of the ideas that surfaced in the course. If you are interested in exploring them in more detail I suggest you obtain a copy of Allan Savory's book, "Holistic Resource Management." In addition, there were several SSCA members attending the course, and I'm sure they would be willing to discuss many of these ideas.

Nancy Fraser
Soil Conservation Specialist

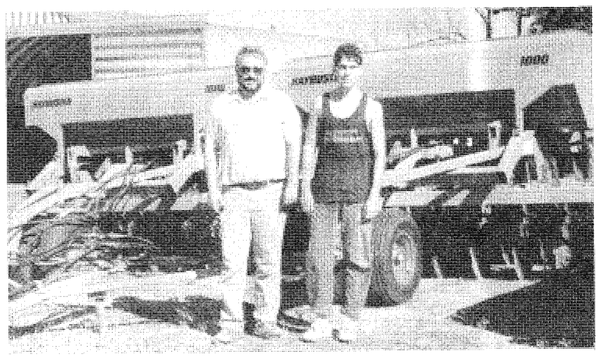
Watching the soil blow from his fields a few years ago didn't fit into Lloyd Liebrecht's farm plans. At that time, the Yorkton area farmer decided his tillage practises had to change.

The first change was the purchase of a Morris Seed Rite drill. Lloyd liked the minimum tillage system but felt additional changes were necessary. Twelve years ago, he adopted a continuous cropping system. Using a Haybuster 1000 drill with banding capabilities, he now works on a four year rotation. In Year 1, he applies liquid Treflan in the spring, then seeds either peas or canola. The second year, barley or mustard is seeded. Winter wheat has been seeded in Years 3 and 4. To date, he hasn't experienced any exceptional disease problems in his canola or peas on the short rotation. This year, however, diseases reduced his winter wheat yield to 9 bushels per acre. In future, he will seed flax in Year 4. Lloyd has not grown spring wheat for a number of years because his marketing options are limited. He feels winter wheat and barley provide greater market opportunities.

Over the years, Lloyd says his crops grown under zero till conditions have yielded as well as those grown under conventional till. He expects to see the same results in this year's crops. Since there is no significant difference in crop yield between the two tillage systems, Lloyd figures summerfallowing to conserve moisture doesn't make sense.

Weed control and high herbicide prices are two of the difficulties facing producers who continuous crop. Many producers in this area feel summerfallowing is necessary to control weeds. Lloyd's comment about that practise is "If summerfallowing does such a perfect job of controlling weeds, then considering the number of times each field has been summerfallowed over the years, there shouldn't be a weed in the country!" Recognizing that summerfallow is not a desirable method of weed control from a conservationist's point of view, Lloyd says some years, summerfallow proves to be more economic than utilizing herbicides. The example he uses is wild oat control in barley. Lloyd feels that wild oat control costing $12 to $14 per acre is just not affordable when the price of barley hovers around the $2 per bushel mark.

In order for farmers to change their tillage habits, Lloyd says herbicide prices must



drop. He says farmers recognize that products such as 2, 4-D and glyphosate are useful conservation tools. But when glyphosate was $30 per acre, who could afford to use it? Lloyd is angered by politicans who, in one breath, encourage producers to use herbicides to conserve the soil and in another, protect the prices of herbicides because of the lobbying efforts of the large multi-national companies.

Lloyd has been a member of the SSCA for two years. When asked why he joined the SSCA, he replies "the Association is a group that thinks about conservation the way I do so I feel it is worthwhile to support."

Lloyd has been farming since 1967. He and Wilma, his wife and children David and Gloria crop about 1000 acres per year.

Juanita Polegi
Regional Soil Conservationist

Saskatchewan-Australia Soil Conservation Exchange and Tour

The SSCA is currently working with an Australian counterpart, the Soil and Water Conservation Association of Australia, to develop a producer exchange and tour. The objective of the tour will be to promote the exchange of information, ideas and techniques for conserving our respective land resources. The two week tours, one in Saskatchewan for 30 Australians and one in Australia for 30 producers from Saskatchewan will focus on conservation organizations, on-farm conservation, community action on the environment, rangeland management and water conservation.

If you are interested in either helping with the tour here or in participating in the Australian tour, please forward your name and some background information about your farm to:

The Executive Manager
Saskatchewan Soil Conservation Association
132-3085 Albert Street
Regina, Saskatchewan
S4S 0B1

The tours will be designed for farm couples from both countries and will be limited on a first-come, first-serve basis. If you forward your name to either help or participate, you will be sent more specific information and will be kept up-to-date on the planning process.

Participating Organizations:

1) Saskatchewan Rural Development — Extension Service (Co-Chairman)
2) PFRA — Soil Conservation Service (Co-Chairman)
3) Saskatchewan Soil Conservation Association
4) Saskatchewan Rural Development — Lands Branch
5) Saskatchewan Parks — Wildlife Branch
6) Saskatchewan Institute of Pedology — Saskatchewan Soil Survey
7) Agriculture Development Fund
8) Ducks Unlimited

South West Region

1) Jim Pratt (Soils & Crops Agrologist) Swift Current	778-8284
2) Paula Brand (Area Conservationist) Swift Current	773-7255
3) Patricia Flaten (Regional Soil Conservationist) Swift Current	778-8284
4) c/o Greg Haase (Manager) Swift Current	778-8292
5) Chris Dunn (Regional Biologist) Swift Current	778-8205
6) Marie Boehm (Soil Surveyor) Saskatoon	975-5638
7) Bruce Baumann (Regional Consultant) Saskatoon	933-6243
8) Doug Fraser (Area Biologist) Regina	569-0424

North West Region

1) Eric Johnson (Soils & Crops Agrologist North Battleford	446-7475
2) Garet Cormin (Area Conservationist) North Battleford	445-6217
3) Blair McClinton (Regional Soil Conservationist) North Battleford	446-7650
4) Al Foster (Land Representative) North Battleford	446-7472
5) Wally Kost (Regional Biologist) Saskatoon	993-7942
6) Clint Hilliard (Soil Surveyor) Saskatoon	975-5638
7) Ron Kehrig (Regional Consultant) Saskatoon	933-5094
6) Dave O'Bertos (Area Agrologist) North Battleford	445-2575

North East Region

1) Roy Button (Soils & Crops Agrologist) Tisdale	873-2585
2) Jason Fradette (Area Conservationist) Melfort	752-4442
3) Garry Meier (Regional Soil Conservationist) Tisdale	873-4290
4) Brian Harris (Land Representative) Prince Albert	953-2784
5) Ed Kowal (Regional Biologist) Prince Albert	953-2695
6) Mike Boch (Soil Surveyor) Saskatoon	975-5636
7) Ron Kehrig (Regional Consultant) Saskatoon	933-8116
8) Phil Curry (Land Negotiator) Melfort	752-2791

East Central Region

1) Zane Lewchuk (Soils & Crops Agrologist) Yorkton	786-1508
2) Garry Bank (Area Conservationist) Watrous	946-3303
3) Juanita Polegi (Regional Soil Conservationist) Yorkton	786-1526
4) Brant Kirychuk (Land Representative)	563-4100
5) Adam Schmidt (Regional Biologist) Melville	728-4494
6) Rick Stushnoff (Soil Surveyor) Saskatoon	975-5636
7) Ron Kehrig (Regional Consultant) Saskatoon	933-5094
8) Dave Struthers (Agrologist) Yorkton	782-2108

West Central Region

1) Larry Gramiak (Soils & Crops Agrologist) Saskatoon	933-5285
2) Dennis Haak (Area Conservationist) Rosetown	882-4272
3) Garth Patterson (Regional Soil Conservationist) Saskatoon	933-5287
4) David Hryhor (Land Representative) Saskatoon	933-5098
5) Wally Kost (Regional Biologist) Saskatoon	933-7492
6) Allan Woloschuk (Soil Surveyor) Saskatoon	975-4307
7) Bruce Baumann (Regional Consultant) Saskatoon	933-6243
8) Doug Fraser (Provincial Biologist) Regina	569-0424

South East Region

1) Dave Shortt (Soils & Crops Agrologist) Weyburn	848-2382
2) Dean Smith (Area Conservationist) Weyburn	842-4624
3) Bob Linnell (Regional Soil Conservationist) Weyburn	848-2381
4) Larry Spearing (Land Representative) Moosomin	435-3357
5) Kim Eskowich (Regional Biologist) Redvers	452-6060
6) Alvin Anderson (Soil Surveyor) Saskatoon	975-5640
7) Bruce Baumann (Regional Consultant) Moose Jaw	694-3616
8) Dave Struthers (Agrologist) Yorkton	782-2108

For many residents of southern Saskatchewan the 49th parallel is a lonely customs station separating thirsty stubble jumpers from cheaper petrol and beer. Dry hot winds, dust storms and occasionally rain, pass back and forth without having to stop, state citizenship and pay duty on imported goods. Those who farm along the 49th probably don't see much difference in the types of crops grown, but beyond that guntoting U.S. immigrations officer at the customs station between you and Glen's Border Bar in Turner Montana there are some major differences in political philosophy, the price of your favourite liquid and most importantly, soil conservation.

Over the past year, movements toward "free-er trade" and the resultant controversy over who has the larger agricultural subsidies has invariably lead to comparisons between U.S. and Canadian agricultural programs. With soil conservation a prominent focus in both countries, this is how the U.S. Food Security Act of 1985 (1985 Farm Bill) and the Canada-Saskatchewan Agreement on Soil Conservation broadly compare.

United States Food Security Act Of 1985

The 1985 Food Security Act requires farmers to protect their land against soil erosion in exchange for United States Department of Agriculture (USDA) farm program benefits.

The USDA farm programs include:

i) Price, income and disaster supports (Agricultural Act of 1949 and the Commodity Credit Corporation Charter Act),
ii) Crop Insurance,
iii) Farmers Home and Administration loans (Consolidated Farm and Rural Development Act),
iv) Commodity Credit Corporation storage payments,
v) Farm storage facility loans,
vi) Conservation Reserve Program annual payments,
vii) Other programs under which the USDA makes commodity-related payments.

There are four major conservation provisions of TITLE XII – CONSERVATION, of the 1985 Food Security Act.

"Sodbuster"

If highly erodible lands were not cultivated to produce an agricultural commodity crop from 1981 through 1985 and are converted to cropland, the farmer must immediately farm under an approved on-farm conservation plan. To remain eligible for USDA benefits, the farmer must implement all of the required practices outlined in the conservation plan prior to seeding a crop.

"Conservation Reserve Program (CRP)"

The Conservation Reserve Program offers producers financial and technical help in retiring highly erodible cropland. The Agricultural Stabilization and Conservation Service (ASCS) will share up to half the cost of establishing permanent grasses, legumes, trees, windbreaks, or wildlife plantings on the highly erodible cropland. Under 10 year contracts, ASCS will make annual rental payments to producers as long as the terms and conditions of the contracts are met.

"Swampbuster"

If a wetland area (soils which are covered with standing water or are saturated for most of the year, and supports mostly water-loving plants) is converted to cropland after December 23, 1985, the farmer loses eligibility for USDA program benefits — not just on the converted wetland area, but on all the land farmed.

"Conservation Compliance"

If highly erodible land was cultivated to produce a commodity crop between 1981 and 1985, then a farmer must get an approved on-farm conservation plan for the highly erodible lands by January 1, 1990 from the soil and water conservation district, and fully implement the plan by January 1, 1995.

All farmers in the U.S., who wish to remain eligible for USDA farm program benefits, are affected by the "Conservation Compliance" provisions of the 1985 Food Security Act.

Under "Conservation Compliance" erodibility determinations for identifying highly erodible land are made by using Soil Map Units and an Erodibility Index. The Erodibility Index for a soil is determined by dividing the potential average annual rate of erosion for each soil by its predetermined soil loss tolerance (T) value. The "T" value represents the maximum average annual rate of soil erosion that could occur without causing a decline in long-term productivity.

A Soil Map Unit subject to significant erosion by either water or by wind shall be determined to be highly erodible if either the water or the wind value for the map unit equals or exceeds eight (8).

For water erosion, the potential average annual rate of sheet and rill erosion is estimated by multiplying the following factors of the Universal Soil Loss Equation: R — rainfall factor; K — soil erodibility factor or the ability of rainfall and runoff to move soil particles; and the function LS, which includes the effects of slope length (L) and steepness (S).

$\frac{RKLS}{T} \geq 8$, is considered highly erodible.

For wind erosion, the potential average annual rate of wind erosion is estimated by multiplying the following factors of the wind erosion equation: C — climatic characterization of wind speed and surface soil moisture; and I — the potential soil loss in tons per acre per year.

$\frac{CI}{T} \geq 8$, is considered highly erodible.

Within the Soil Map Unit a Field shall be determined Highly Erodible if:

1) One-third (⅓) or more of the total field acreage is identified as soil map units which are highly erodible (erodibility index is ≥ 8);
2) Fifty (50) or more acres in such a field are identified as soil map units which are highly erodible (erodibility index is ≥ 8).

Without a doubt the Conservation Provisions of the 1985 Food Security Act are complex and the penalties for non-compliance severe. Verification of "Conservation Compliance" by all U.S. farmers is being carried out by the USDA Agricultural Stabilization and Conservation Service (ASCS) on a spot check basis. Individual producers are also required to annually certify (by signature) that they are farming according to their conservation plan.

Overall the U.S. hopes to reduce soil loss by wind and water, protect the nations long-term capability to produce food and fibre, reduce sediment and improve water quality, and to assist in protecting the nations wetlands under the 1985 Food Security Act. In the effort to achieve this goal the USDA currently (1990) has approximately 5,300 soil conservation staff involved, nation wide, implementing the conservation provisions of the 1985 Food Security Act. The approximate cost of these human resources is $230 million U.S. annually.

Nationally across the U.S., there is approximately 140 million acres of Highly Erodible Land (33% of total cultivated land) covering some 1.4 million farms. In the states directly south of Saskatchewan, the amount of land considered Highly Erodible is 9.6 million acres in Montana (56% of total cultivated land covering 23,000 farms) and 7.2 million acres in North Dakota (26% of total cultivated land covering 26,000 farms). Using the USDA definition of Highly Erodible Land, Saskatchewan has approximately 21.1 million acres (43% of the total cultivated land) considered Highly Erodible.

Canada-Saskatchewan Agreement On Soil Conservation

The Canada-Saskatchewan Agreement on Soil Conservation signed in 1989 encourages Saskatchewan farmers to protect their land against soil erosion by providing financial incentives to farmers to demonstrate soil conservation practices. The Agreement is short-term in nature and will end on March 31, 1993.

The overall objective of the Agreement is ". . . to encourage the implementation of the most appropriate soil resource management and use, within practical economic limits and according to the soils capability, in order to sustain the long-term productivity of the soil. Economic diversification will be enhanced where applicable within the context of soil conservation activities."

Unlike the 1985 Food Security Act in the U.S., the Canada-Saskatchewan Agreement on Soil Conservation is neither regulatory nor mandatory with respect to producer participation. Implementation of conservation practices on Saskatchewan farmers is totally voluntary.

Programs under the Agreement are broken into five distinct areas:

1) **On-Farm Soil Conservation** — the Save Our Soils (SOS) Program through the 43 local Agriculture Development and Diversification (ADD) Boards provides financial assistance for voluntary field demonstrations of conservation practices to reduce wind and water erosion, soil salinity and soil organic matter loss. The planting of field shelterbelts is stressed under SOS to control erosion and enhance wildlife habitat;
2) **Land Use Adjustment** — the Permanent Cover Program (PCP) will provide a one time financial incentive to farmers who are currently cultivating marginal or highly erodible lands if they agree to seeding perennial forages on these lands for a period of either 10 or 21 years. Unlike the U.S. Conservation Reserve Program, Saskatchewan farmers enrolled in the PCP can harvest or graze the forages on these lands. Financial assistance is also available to producers whose lands have become severely salinized through irrigation and natural processes;
3) **Awareness and Education** — efforts in this area focus on increasing the knowledge of soil conservation among producers, the general public, local governments and related staff. Provincially much of this effort has been contracted to the Saskatchewan Soil Conservation Association (SSCA);
4) **Soil Inventory and Monitoring** — efforts in this area focus on completing the documentation of a detailed description of Saskatchewan soils, and a program to monitor soil quality changes over time;
5) **Research and Development** — funding is available to expand and extend ongoing research activities and to initiate others, which develop new soil management technologies for Saskatchewan.

Total funding committed to soil conservation programs under the Agreement is $54 million over three years.

Soil Conservation: The Bottom-Line

So there you have it, two philosophically different approaches to conserving the land resource. The U.S. has moved in the long-term regulatory direction, unless of course you're a farmer who can prosper without the USDA support programs, while Saskatchewan and Canada has moved in the short-term voluntary demonstration direction. Financially the U.S. is committing $4.68 U.S./acre (modest approximation) of cultivated land annually (for the long-term), while Saskatchewan and Canada is committing approximately $0.40/acre of cultivated land annually for the next three years.

Since there is such an overwhelming difference in the level of government (societal) support for conservation between the U.S. and Canada-Saskatchewan, I should explain how the figures are arrived at. Under the Conservation Reserve Program (CRP), the U.S. has leased 33,922,565 acres (10 year agreements) to seed to forages or trees at an average annual rental of $48.93 (U.S./acre, plus a one-time $25 U.S./acre seeding allowance. Add to this the 1990 staffing costs of $230 million U.S./yr and you get approximately $4.68 U.S./acre over the 420 million acres of cultivated land in the U.S. This figure does not include "Swampbuster", office facilities, research or other infrastructural costs and therefore can be said to be a rather modest approximation.

On the other hand, the Canada-Saskatchewan commitment is rather straight forward. $54 million over 3 years (Save Our Soils Program, Permanent Cover Program, research, education and soil survey), plus the ongoing federal (PRFA) and provincial commitments of approximately $1.6 million annually spread over the 49.5 million acres of cultivated land in Saskatchewan. This adds up to a short-term commitment of approximately $0.40/cultivated acre per year.

Across the 49th parallel, there is nothing less at stake than the future long-term prosperity of the North American agricultural sector and the long-term health of our agricultural environments. Until we develop a balance, where conservation is regarded as an integral part of the production system, and not just a side issue, or someone else's concern, will our land resoures be sustained for future generations of society. Based on the economic realities and on the realization that a societal land conservation ethic is not likely to be achieved over the short-term, which approach toward conservation is more appropriate?

Next time you make a run across the line for a cool one and a fill-up, ask a Montana or North Dakota producer what he thinks of "Conservation Compliance" and the 1985 Farm Bill. Oh, and don't forget your birth certificate, some U.S. cash and be sure to tell'em you're Canadian eh!

If you have any thoughts on what approach is better for agriculture, I would be happy to hear from you.

John J. Kiss
Executive Manager

Canadian Western Agribition
Regina, Sask.
Nov. 24-30, 1990

Organic Agriculture
Travelodge, Saskatoon
Oct. 31-Nov. 1, 1990
Donna Fleury (U of S) 966-5592

What's In Stock For You
Travelodge, Saskatoon
Dec. 11-13, 1990
Bob Drysdale
(Livestock Branch) 787-2045

Farm and Home Week
Saskatoon
Jan. 7-11, 1991
Bruce Hobin (U of S)
966-5551

HRM in Practice
Kindersley, Sask.
Jan. 24-25, 1991
Len Pigott (Extension) 463-2896

Livestock Update
Saskatoon
Feb. 18, 1991
Glen Hass (U of S) 966-5550

Rangeland Planning
U of S
Feb. 19 & 20, 1991
Glen Hass (U of S) 966-5550
or
Donna Fleury (U of S)
966-5592

Canada-Saskatchewan Agreement on Soil Conservation

Soils and Crops Workshop
U of S
Feb. 21 & 22, 1991
Donna Fleury (U of S) 966-5592

SSCA/SCC Joint Annual Meeting
Queensbury Centre, Regina
March 7-9, 1991
SSCA (Regina) 787-0558

Sustaining Farm Profits (HRM short course)
Vermilion, Alberta
March 11-13, 1991
Mary Holtman (Taber, Alta.)
223-3065

SOIL CONSERVATION WEEK
April 8-14, 1991

RECYCLED PAPER

Fall
1990

Many producers in the area are not aware that the Indian Head Experimental Farm, apart from being one of the first Experimental Farms to be established by the Canadian Government in 1886, has one of the oldest continuing herbicide application studies in North America and maybe even the world.

Chemical weed control work was first carried out at the Central Experimental Farm in Ottawa in 1899. The first chemicals used were copper and ferrous sulphates. Research efforts concentrated mainly on the testing of different inorganic compounds. The major weakness with using inorganic compounds is that most of these compounds contain metal components. Metals will accumulate in the soil and some of them can become toxic if they accumulate to any appreciable quantities. As well, many of these compounds were also very harsh on the crops and detrimental on the soil micro-organisms. Soil micro-organisms play an important role in recycling nutrients from crop residues. The testing of inorganic compounds lasted for approximately 45 years.

In 1945, a major breakthrough in chemical weed control occurred. The U.S. discovered 2,4-D and almost at the same time Britain discovered MCPA. These discoveries were revolutionary because these new inorganic compounds, apart from killing weeds, were also selective. It was found that a large number of broadleaf annual and perennial weeds could be eliminated without harming wheat and other cereal crops. These chemicals proved to be inexpensive and could be applied as a spray or a dust. The herbicide was tested at different locations in Western Canada during 1946 and 1947 to verify the reported effects. The claims by the manufacturers were substantiated and a new era in agricultural production was started. 2,4-D was found to be particularly effective for controlling wild mustard in spring wheat on the Regina plains.

The enthusiasm for these new compounds also led to some concerns, the main one being what impact the continual use of these compounds would have on long term crop production. In 1947, Dr. P. O. Ripley, Dominion Field Husbandman, asked Mr. W. H. Gibson, Superintendent of the Indian Head Experimental Farm to initiate a new set of studies to determine if these new organic chemicals would build up in the soil and whether or not there would be any detrimental effects to crop production. Mr. E. V. (Ted) McCurdy, currently living at Indian Head, was instrumental in implementing these requests from Ottawa. The treatments involved MCPA (amine) and 2,4-D (amine and ester formulation) at a low and a high rate for each. The low and high rates correspond to rates used on annual and perennial weeds, respectively. A three year crop rotation (fallow-wheat-wheat) was used for each chemical. It should be noted that chemicals were also applied during the summerfallow period so that each treated plot has received 40 consecutive yearly applications.

The results from 1948-1973 were summarized and submitted to a scientific journal by Ted McCurdy from Indian Head and Ed Molberg from Regina. The results at the time showed that the high rate of ester formulation reduced yields of spring wheat but that there was not evidence of any buildup of herbicides in the soil or harmful residual effects on the soil microflora from the repeated use of these treatments.

The year 1988 represents the 40th year of this ongoing research and the results from 1973 to the present are being written for publication. A number of different studies have been carried out since 1973 and the overall conclusions from these will be summarized.

Yields of wheat were not reduced by the continual use of low and high rates of 2,4-D amine and ester formulations. The yields of wheat increased with the use of low and high rates of MCPA. The continual use of 2,4-D and MCPA has had a beneficial effect on wheat yields when compared to the untreated plots.

An attempt was made from 1978 to 1981 to quantify the amount of MCPA and 2,4-D present in the soil using solvent extraction and gas chromatographic analysis. The amount of herbicide present in the soil was lower than the limit of detection possible with the analytical instruments used for the analysis. The results also showed that the herbicide had not leached into the soil. These results are substantiated by the fact that wheat yields have not been negatively effected after 40 years of continual herbicide use.

In 1987, a controlled study was done to measure the rate of herbicide breakdown by the soil micro-organizisms. The results of these studies showed that the rate of breakdown of 2,4-D and MCPA was faster on the treated than the untreated plots. This is due to the fact that the micro-organisms responsible for breaking down these herbicides were present in greater numbers on the treated than untreated plots. As a matter of interest, there was only 20% of the 2,4-D remaining after four days from time of application on the long term treated soil. In the case of MCPA, only 10% remained after 8 days from time of application.

What have we learned from this 40 year herbicide application study with 2,4-D and MCPA?

1. the herbicides are not accumulating in the soil.
2. the herbicide residues are not moving down into the soil.
3. the rate of breakdown of 2,4-D and MCPA was faster on the treated than untreated soil due to soil microbial adaptation.
4. the long term yields have not been adversely affected and if anything, there has been some improvements in yield from the use of these herbicides.

There is a great concern among environmentalists and consumers about the long term risks of pesticide use in agricultural food production. Although this study only investigates the long term effects of two commonly used herbicides in Western Canada on the soil environment and crop production, it does contribute to a greater understanding of the impact of herbicides in the environment and helps to alleviate some of the misconceptions about long term herbicide use on food production.

Dr. Guy Lafond, Cereals Agronomist, Indian Head Experimental Farm
Dr. Allan Smith, Soil Chemist, Regina Research Station

Data of several conservation tillage research projects conducted at the Swift Current Research Station since 1981 as summarized by F. B. Dyck, R. P. Zentner, M. Peru, C. A. Campbell and S. Tessier.

- Zero-tillage practices provide effective protection from wind erosion via the production/retention of non-erodible surface aggregates and adequate crop residue.
- To a lesser degree, minimum tillage practices (wheat-fallow rotation) result in similar benefits but provide insufficient protection for very fine and coarse textured soil.
- Preseeding tillage increases the erodible fraction of the soil at the surface to near 60% level in many years, thus should be used judiciously or possibly eliminated in high erosion areas.
- Chemical fallow and to a lesser extent minimum tillage fallow, consistently conserve more water (8% and 5%) during dry summers as compared to conventional fallow.
- Zero-tillage failed to consistently out-yield conventional tillage grown wheat in south west Saskatchewan.
- The conventional tillage system, due to lower overall costs, provided the best economic returns, thus there is little economic motivation for producers to adopt conservation tillage practices.
- Zero-tillage seeding of stubble for both Canada Prairie Spring and Hard Red spring wheats sometimes gives increased yields over minimum tillage seeding equipment, particularly in years with dry springs.
- On a silt loam soil, the Swift Current 0-till Disc Drill generally gives better yields for seeding both spring and winter wheat as compared to drills with hoe openers such as the Versatile Noble 2000. This is so despite the fact the hoe drill gives consistently higher plant stands. It is hypothesized this is due to less soil disturbance and possibly less moisture loss but we have been unable to verify the hypothesis.
- Residue build up from 9 years of continuous zero-till cropping of wheat is not sufficient to impede adequate seed placement using disc openers.
- Research techniques need to be developed to explain why one drill or opener packer wheel combination is better than another. Present technology is laborious, time consuming and expensive. It may also be site specific. Research at Swift Current is shifting to look at the soil seed environment on a more detailed micro basis to try to answer some of the questions.

Now this is the Law of the Land, son —
as old and as true as the hills.
And the farmer that keeps it may prosper,
but the farmer that breaks it, it kills.
Unlike the Law of Man, son,
this law it never runs slack,
What you take from the land for your own, son,
you've dam well got to put back.
Now we of the old generation
took land on the cheap and made it good;
We stocked, we planted and we reaped, son;
we took whatever we could.
But erosion came creeping slowly,
then hastened on with a rush;
Our bluegrass went to glory,
and we don't relish cheatgrass that much.
The good old days are gone, son,
when those fields were covered with wheat;
Now the wheat is thin and spotty, son
as the soil blows in the heat.
Did I say those days were past, son?
For me they're as good as gone.
But to you they will come again son,
When the job I set you is done.
I have paid for this farm and fenced it,
I have robbed it and now I unmask;
You've got to put it back, son,
and yours is the harder task.
Stock all your paddocks wisely,
rotate them all you can;
Block all the loose storm water,
and spread'em out like a fan.
Tramp all your straw into compost,
and feed it to the soil;
Contour your lands where they need it,
there's virtue in sweat and toil.
We don't really own the land, son,
we hold it and pass away;
The land belongs to the nation,
till the dawn of Judgement Day.
Now the nation holds you worthy,
and you'll see, if you're straight and just;
That to rob the soil you hold son,
is forsaking a nation's trust.
Don't ask of your farm a fortune;
true pride ranks higher than gold;
To farm is a way of living;
learn it before you grow old.
Now this is the Law of the Land, son
to take out you've got to put back;
And you'll find that your life was full, son,
when it's time to shoulder your pack.

"The Law of the Land" was originally published in The Stellerlander Newspaper, Vryburg, Cape Province, South Africa, author unknown. Adapted by J. J. Kiss from the version published in the Australian Journal of Soil and Water Conservation Vol. 2 No. 4, November, 1989.

So often, I hear the statement, "I can't afford soil conservation!" During the discussion which follows, I discover that the producer equates soil conservation with **extensive** herbicide use. This tunnel vision can only be attributed to a successful advertising campaign over the last 5 - 10 years by the herbicide industry.

In reality, herbicide can be used effectively and economically to reduce tillage - 'to reduce tillage' is the operative phrase. In very few situations would herbicide use be the only component of a soil-saving program. For many, a 2,4-D application in the fall or spring is becoming a habit, a habit of saving money and soil compared to the 1 - 2 tillage operations it replaces.

It is our job as SSCA members to spread the word that soil conservation can mean many things, such as seeding forages, planting shelterbelts, managing our pasture wisely and continuous cropping. It may **also** include spraying stubble with herbicide and then carefully choosing tillage implements and their method of use to maintain anchored trash cover.

Patricia Flaten
Regional Soil Conservationist

The Newsletter of the Saskatchewan Soil Conservation Association Inc.

SSCA

Our message is spreading. During my travels this summer to various field days, tours and meetings, I was encouraged by the effort Saskatchewan producers are putting into conserving soil. Whether it is something new or something tried and true, producers are willing to consider conservation practices. This attitude makes our job easier in some respects. However, it also reinforces how critical it is to redouble our efforts to reach those who haven't been persuaded of the benefits of soil conservation.

A quick recap of some SSCA activities since the last newsletter. We participated in events surrounding 1990 Soil Conservation Week. Banners, media kits and displays were used to alert as many people as possible. SSCA members provided support for a booth at Farm Progress Show. We were part of a group effort encouraging many aspects of land stewardship for the 90's. We have had ongoing representation and input into the Agricultural Advisory Group to the Saskatchewan Round Table on the Environment. Staff have participated in extension events too numerous to mention as they promote the need to conserve our crop, range and wetland resources.

The end of harvest does not signal a stop to our efforts. Fall and winter is the time to take a little breather and broaden our knowledge. With this in mind, the SSCA is planning and will be involved in several events.

Our biggest challenge is organizing and hosting the three day joint annual meeting of Soil Conservation Canada (SCC) and the SSCA. "SOIL CONSERVATION FOR THE FUTURE: Practices, Programs and Policies" is scheduled for March 7, 8 and 9, 1991 at the Queensbury Centre in Regina. In addition to the regular program of presentations, there will be a major trade show, a teacher and school education program and an opportunity for the general public to participate.

We are expecting 300 delegates from across Canada to attend. It will be an excellent opportunity to hear both producer and professional presentations. It will also be an avenue to bend the ear of several policy makers. There is more time on the agenda devoted to practical soil conservation than ever before. The trade show was a success last year and we intend to improve it in 1991.

Other provincial events include a booth at Agribition in November and a media campaign for 1991 Soil Conservation Week, April 8 to 14. Production of a timely and practical 'How To' video is well underway. SSCA members will be explaining how to implement various conservation practices in a non-technical format.

Regional events are also planned to serve local needs. Regional staff will keep members informed as plans develop. Look for local meetings, panel discussions and conferences.

Along with this newsletter, you will receive copies of the newly ratified SSCA Position Statements and Code of Ethics. The Board has distributed these documents to electronic and print media personnel throughout the province, as well as policy makers. The Code of Ethics is specifically intended to help members keep the goals of the Association in sight. It is produced in a format suitable for framing so we hope that everyone will find a prominent location to display it. Use these documents as points of discussion with neighbours to help spread our message.

To identify ourselves and provide visible recognition of membership, lapel pins have been developed. Every member will receive one with this package. The logo of the SSCA is depicted along with a symbol for wildlife and trees, symbolizing our recognition that agriculture, wetlands, native rangeland and wildlife habitat are all valued uses of Saskatchewan's land base. The words Prairie Steward appear as a reminder of our roles.

SSCA elections are taking place this fall. A package containing candidate statements and an explanation of election procedures has been put together. I urge you to read the material carefully and make your vote count. We are facing a critical year for the SSCA. Strong leadership is needed to carry out our ambitious program and direct us towards our goals. I am confident that among our membership there are individuals who can help make it happen.

As a final note, I would like to appeal to you, the members of the SSCA to help us in our tasks. It is only through a strong network that we will accomplish our objectives. The Board of Directors are available to hear your concerns and ideas. The newsletter is a forum for your views. There are many events that would be strengthened through active participation of members. We need to continually recruit new members. Make a commitment this fall to become actively involved in the Association.

Kenneth Allport

Ken Allport
President, SSCA

Who'd have thought that Swift Current would have fewer dust storms than Regina, Saskatoon, or even Yorkton? The incessant teasing that we endure in the southwest over the windspeeds would lead one to think otherwise.

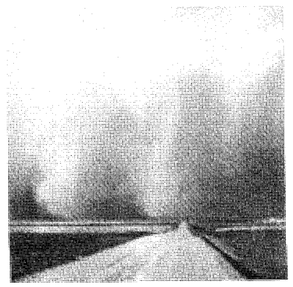
You may have heard, or read articles featuring the dust storms analysis by Elaine Wheaton, Saskatchewan Research Council and Aninda Chakravarti, University of Saskatchewan. Their report shows that during 1977 - 1985 the average annual frequency of days with dust storms was 5.1 at Saskatoon, 5.2 at Regina, 4.7 at Yorkton and 3.2 at Swift Current. Regina holds the record for number of dust storm days in a year with 18 occurring in 1981.

Dust storms are defined as reducing visibility to 1km or less at eye level, as reported by 31 weather station observers across the Prairie Provinces.

Wheaton says that the wind erosion risk and dust storm frequency maps do not mirror each other in the southern corners. So, how can this be? It may be related to the limited years of available data and the limited number of weather stations reporting this information.

It may also be a reflection of land use patterns. Native and tame pasture reduce the acres of land susceptible to wind erosion. There may be a greater recognition of soil conservation practices in the Southwest than in the rest of the province. The erosion risk is high and farmers know it.

On the other hand, the large-scale map produced in this study does not reflect soil



texture changes. Those farming heavy clays know that the classical spring brown outs are evidence that there is still much to be done in adopting sound soil-conserving practices.

Across the Southwest, more forages and greater use of minimum tillage are required. We need to take a hard look at spring tillage practices which we all know and Wheaton confirms, is the peak dust storm period.

Wheaton's map tempts us to compare ourselves to other centres in a we-they attitude. However, the real challenge will be to knock all of those figures down by half over the next 15 years.

Patricia Flaten
Regional Soil Conservationist

In cooperation with the Agriculture Development Fund

Saskatchewan Soil Conservation Association Inc.

Head Office:
132-3085 Albert Street, Regina, Saskatchewan S4S 0B1
(306) 787-0558

Ken Allport, President, Kyle, 375-2691
Garry Schweitzer, President Elect, Eston, 962-4751
Brett Meinert, Past President, Shaunavon, 297-3159
NW Director, Vacant
NE Director, Vacant
Dave Bueckert, WC Director, Tugaske, 759-2523
Fred Phillips, EC Director, Yorkton, 782-5265
Gerald Girodat, SW Director, Shaunavon, 297-2913
Gerry Willerth, SE Director, Indian Head, 695-2086

132-3085 Albert Street,
Regina, Saskatchewan S4S 0B1
(306) 787-0558

John J. Kiss, Executive Manager
Carolyn Fife, Office Manager

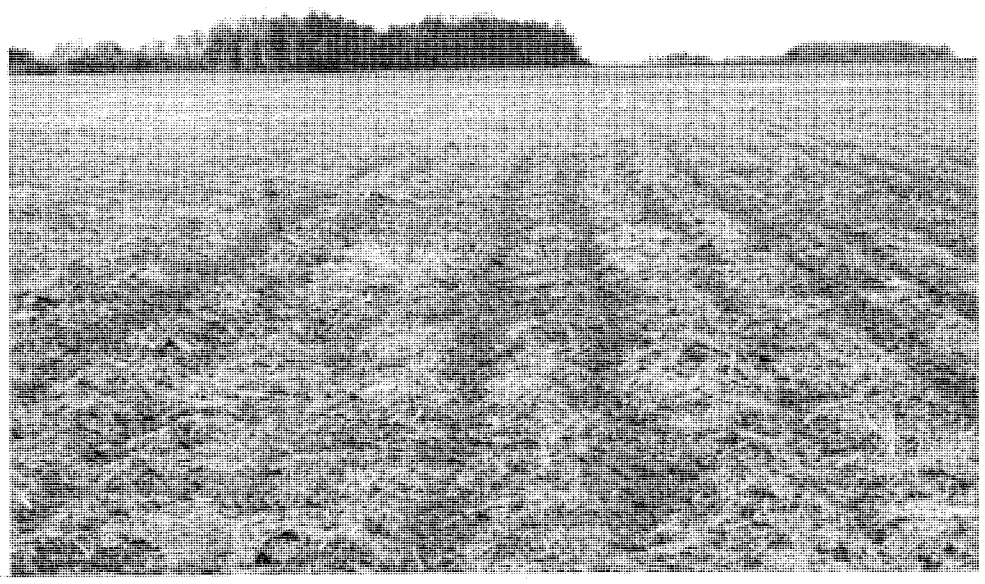
Soil Conservation Specialists

Nancy Fraser, Range and Pasture Management
James Lokken, Conservation Economics
Steve Paquette, Weed Control and Tillage
Chris Ruschkowski, Shelterbelts and Agronomy

Regional Soil Conservationists

Blair McClinton, North Battleford, 446-7650
Garry Meier, Tisdale, 873-4290
Garth Patterson, Saskatoon, 933-5287
Juanita Polegi, Yorkton, 786-1526
Pat Flaten, Swift Current, 778-8284
Bob Linnell, Weyburn, 848-2381

Regional Reports



In 1990 the north west had some of the worst wind erosion it has ever seen. The combination of dry soil conditions, and strong winds in May and June removed thousands of tonnes of topsoil from this region. There were problem areas in all seven districts but the Unity and Turtleford Districts were hit the hardest. What caught everyone off guard was that it wasn't just the light land that had problems. Some of the good heavy land that had rarely blown had the worst erosion. Several fields were eroded down to the plow layer. Even attempts at emergency tillage were futile.

The main factors that contributed to the severe erosion are:

— poor soil moisture
— very strong winds
— large field size — over 100 acres
— summerfallow on 1988 crop residues

This combination of climatic and field conditions had some devastating effects. This was particularly true on canola fields which had no crop residue and very few lumps. Some canola fields were reseeded three or four times.

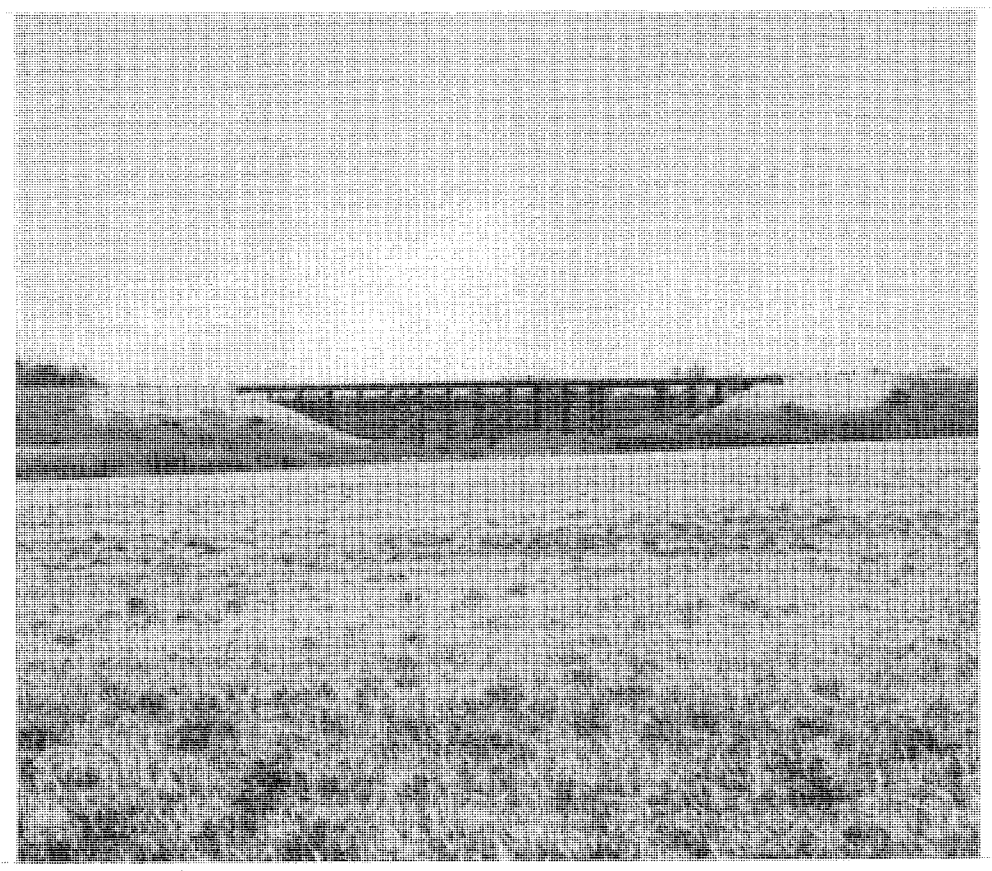
The events of this spring were very effective at convincing producers of the need for soil conservation. There is an increase in the amount of chemfallow in the Macklin area according to Therell Johnston, a farmer member. Whether this will happen again next year is yet to be seen. The attendance at soil conservation tours and field days has also been good. Although the crops look good in most areas, there is a large area in the north west that will have below average crops. Some of these fields will be in fallow next year. It is important that the producers in these areas make an effort to maintain crop residues. This will require some planning.

The first step in any plan is to set goals. In the north west, we recommend a target level of 500 to 1,000 lb/ac of cereal residue depending on the soil texture. To get a rough estimate of the starting residue level in lb/ac, take your yield in bu/ac and multiply it by 100 for wheat, rye and canary seed, and 50 for barley. An estimate of the amount of remaining residue can be made by estimating the number of tillage operations. Modifications can be made to the plan to help retain desired residue level.

A number of practices have been successfully used by farmers in the north west to help. Applying 2,4-D in the fall controls winter annuals including hard to kill weeds like narrow-leafed hawksbeard. Rodweeders can be used for secondary tillage. Wide blade cultivators work well in the drier areas of the region. A deadrod can be used to replace mounted harrows to uproot weeds. Barrier strip seeding can be combined with other operations like a midsummer application of granular trifluralin. Herbicides can be used to replace tillage.

Conservation fallow systems vary from farm to farm and can even vary from field to field. They only require a commitment to carry out the plan. If anyone would like help to develop a conservation fallow system, feel free to give me a call.

Blair McClinton
Regional Soil Conservationist



After a promising beginning to the 1990 production season, drought has again appeared on the scene to limit crop production potential in much of the north east region. Apart from a few districts where showers were timely, the majority of the north east region is going to consider itself fortunate if it harvests an average crop for the region.

As producers watched their crops deteriorate in the July sun, they were again reminded that moisture is most frequently the limiting factor to crop production in the north east. It is at this time that farmers can ask themselves what they might have done differently to hold some of that moisture that they saw blowing across their fields in the form of snow or water running off their fields as the snow melts in the spring.

The whole area of residue management and minimum till/direct seeding can play a major role in conserving that extra moisture that just might make the difference between harvesting or not harvesting a crop. There have been several direct seeding projects established across the north east region in 1990. A wide variety of equipment was used, from specialized and expensive machines designed specifically for zero till seeding to air-seeders and hoe drills that are commonly used on many farms. Local tours have been organized where producers can look at these projects and discuss with their peers the benefits and problems of such a farming system. The heat of late July and early August has helped to visually illustrate the benefits that direct seeding can offer over the systems that use extensive tillage to prepare land for seeding in the north east.

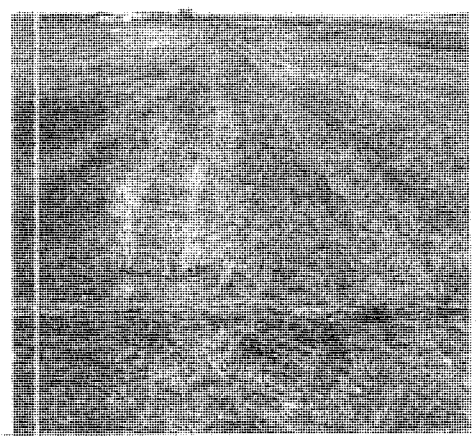
Field shelterbelts are another soil and moisture conserving tool. Planting a well designed shelterbelt using the recommended and adapted species of tree for the area is a management strategy that will pay dividends in the long term.

Successful shelterbelt establishment starts in the summer/fall of the year prior to planting the trees. Site preparation for the new trees is essential. Application of a trifluralin product at 3 times the recommended spring rate should be done in the fall. Control of persistent perennials such as quackgrass and thistle also must be done the year prior to planting. The north east region ADD Boards are utilizing a variety of systems to co-ordinate their tree planting efforts. However, the contract planting program implemented by ADD District 27, Melfort, can be singled out as the most successful in 1989. The ADD Board provided surveying services, soil incorporated granular trifluralin and also planted the trees. The farmer was charged $150.00 per mile for this service. If the producer maintained his tree rows over the next two years he would be credited back $80 per year for doing this, so in effect the farmer could receive a mile of shelterbelt for no cost. If he chose not to maintain his trees the ADD Board would take responsibility for this.

The District 27 tree planting program established about forty miles of trees in 1990 with plans for about 100 miles in 1991.

Again, I encourge producers to contact any of the personnel working on soil conservation in the north east to discuss your conservation ideas and concerns. Remember, soil conservation is in our hands and individually we can contribute to conserving our land resource in Saskatchewan.

Garry Meier
Regional Soil Conservationist



The Save Our Soils program is well under way in the East Central Region. Each of the eight District ADD Boards have developed and implemented a soil conservation program. In spite of the relatively low levels of funding in this Region, an average of 50 projects per district are currently being conducted. Summer tours have been held in seven districts.

Much of the success of the SOS program can be attributed to the District Soils Technicians. These seven fellows are knowledgeable about the program, work well with the producers and generally display great dedication to the program. The Regional Conservation Team appreciates the good job the Technicians are doing.

The RCT has tried to identify areas in which the technicians require more information. As a result, the RCT has organized an ADD Board Update for technicians and all SOS Committee members; Soils Tour for the technicians; and a Wide Blade Demo Day for the technicians.

The RCT, in cooperation with various individuals and groups, has also set up 2 sites demonstrating various fallowing methods. These sites are located along Highway #16 near Kandahar and along Highway #9 near Waldron. The RCT will meet again in the fall.

Annexation of prime agricultural land by both urban and rural municipal councils for the purposes of commercial or residential development has become an issue in the Yorkton area. The issue was brought to the attention of the SSCA's Executive council. As a result, on July 23 a new release was sent to the media indicating the Association's stand against annexation for those purposes. CBC Radio and Yorkton This Week then conducted interviews with Fred Phillips about why the SSCA has taken such a stand.

While the number of SSCA members in this Region is relatively low compared to some other regions, the members continue to be interested in, and carry out, sound soil conservation practices.

Fred D. Phillips and Juanita Polegi

Greetings fellow soil conservationists! The field day season has passed, harvest is now here and it will soon be time to plan for 1991. Those of you interested in snow management should remember to leave the stubble standing over winter. Up to one-third of our precipitation falls as snow (in a normal year). An extra inch or two of moisture in the spring will certainly benefit those crops seeded on stubble. Late fall (mid-October) or early spring (April) application of 2,4-D at 4 to 6 oz/acre is a cost effective method of controlling winter annuals and reducing tillage requirements.

We would like to welcome Maurice Haudegand, one of our new SSCA members. Maurice and Priscilla Haudegand are the third generation to manage their family farm in the St. Denis area. They farm with their two sons, Lionel and Andre. Their discer was replaced by an air seeder a few years ago, and last year a shrouded sprayer was purchased to reduce drift. Fall rye is grown on light, erodible land, and at the urging of their son Lionel, tree planting was started in 1989 to control wind erosion and trap snow. They built their own tree planter which is trailed by a 500 gallon water tank to inject water into the soil at the time of planting. In 1989, carraganas grew up to three feet high during the first season. Weeds are disced and hand hoed when they are small to reduce competition with the trees. Maurice joined the SSCA because he is concerned about soil conservation. He is interested in annual barriers, snow trapping management of light, erodible land and chemical fallow.

There will be a one day seminar on conservation farming in early November for west central members and guests. It will include a panel discussion with conservation farmers and will encourage group discussion. A detailed notice will be sent out in October.

Remember to keep that stubble up!

Dave Bueckert and Garth Patterson

Question: What's the first question you would ask a farmer?
Answer: How are your crops?

Well, in this region, the **crops** are variable as usual. However, we would say that the crops are average to above average except for the Leader district. Moisture conditions there have been dismal, to say the least. In fact, the word is out that the Rural Service Centre took down their 'Wipe Muddy Footwear Off' sign until further notice.

The **Save Our Soils** program has been proceeding well. Most districts have had 1 - 6 fields days each over the summer. Those involved in the program have been excellent to work with. We look forward to Mr. Wide Blade (Reg Mount) returning to the Assiniboia SOS office after being slowed down by health problems.

Careful **range management** results in obvious benefits for soil conservation. Nancy Fraser, SSCA staff member, and Zoheir Abougandia, Regional Rangeland Specialist with Lands Branch, led several workshops this summer across the region. This is an area of involvement which will be expanded in the south west.

The **school** program will also be expanded. Presentations are designed to educate students about soil conservation issues and practices. As with any extension effort, the spin off of such efforts will benefit the students' families and neighbours.

A note or two on **offices**!. in August, Gerald's office was moved to the combine, temporarily. Meanwhile, Pat's office has moved, with the new Rural Service Centre, to the Hillside Plaza on the north edge of Swift Current. Drop in or call anytime, the phone number has not changed. Your experience and inquiries are welcome.

Gerald Girodat and Patricia Flaten

The south east Region is very prone to both wind and water erosion, and is keen on taking swift and sure action to minimize the effects of these by subscribing heavily to programs currently being offered.

Residue Management is recognized as probably the simplest and easiest method to be adopted by the producers in the area and applications are at a high level in all districts of the south east. A large part of the area suffered shortages of moisture during the past three or four years and had a lower than usual crop residue left in the fields as a result. This is making it difficult to sustain the required percent of trash cover to qualify in the program, but nearly all producers are making a superb effort to do the best they can with what they have, and I'm sure will succeed in controlling the growth without the excessive use of tillage.

Herbicide control products and the undercutting machines available today are far superior than the past and are proving to be most effective in soil conservation schemes. Where a producer does consider it necessary to till, most have understood the reason for travelling slower in the field, and have lifted the mulch harrows behind the implement.

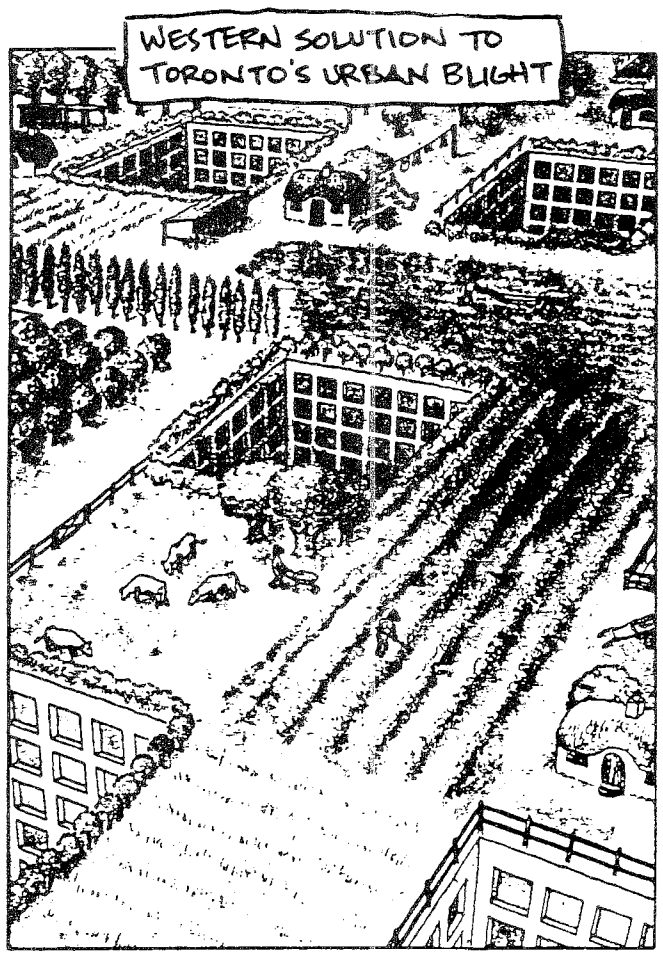
Direct seeding in the region has been widely accepted and tried, where a sufficient number of machines were available, and the results have been very favourable, as shown in the summer conservation tours of producer fields. Producers now realize more than ever, the benefit of keeping the trash cover on the field year round, and certainly direct seeding is a demonstrably effective way of achieving this goal. Important too, is the necessity of adequate straw spreading, for satisfactory crop establishment.

Moisture enhancement techniques such as snow trapping by straw diverters, hi-lo cutting, and barrier trap strips in the stubble, all help in the effort to extend cropping rotations, and thus eventually, to improvement in the organic matter content of the soil. Barrier strip seeding during the summerfallow operation has also proven to reduce wind erosion on open summerfallow over the winter period, and assist the moisture situation, by trapping considerable quantities of snow.

There has been extensive interest in the establishment of field shelterbelts throughout all districts, and many ADD Boards have greatly assisted this valuable program by the purchase or acquisition of tree planters and disc preparation and maintenance equipment. The Shelterbelt Nursery has been working extremely hard to assure supplies of recommended species for next year's planting, and the landscape over the entire province will reflect the interest in this important program.

Many tours of cooperator fields have taken place over the summer, and the results of demonstrations of new techniques have been shown to virtually hundreds of potential conservation minded producers. Congratulations and thanks conservationists.

Gerry Willerth and Bob Linnell



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By: Juanita Polegi

Fifteen years ago, Glennis & Gerald Carlson began their farming career. Their home quarter, located south of Stenen, has such light land, Glennis says "about all it was good for was a golf course and beach." Today, they crop it.

When the Carlsons began farming in 1975, they were on a 50-50 rotation. While they applied fertilizers and herbicides, Glennis says they probably didn't use enough. As a result, their crop yields were low. And to add to their problems, the sandy soil blew and blew. In that first year, Gerald and Glennis decided they had better establish some field shelterbelts. They ordered 1,000 trees from the Shelterbelt Centre and planted them all by hand. They have planted trees in field shelterbelts every year since then.

By 1978, the Carlsons had increased the rate of fertilizer they applied and improved on herbicide applications. They purchased a spreader for their combine so they could better incorporate the straw. And they began to seed fall rye on the summerfallow.

The Carlsons were further encouraged in their conservation efforts by the formation of the Crystal Lake Soil Conservation Co-operative in 1985. As active members of that group, they encouraged their neighbours to undertake new soil conservation efforts. The Carlsons also had many more field shelterbelts planted, bringing their current total to 15 miles. On average, each quarter section they own is now divided into three fields by the trees. Glennis says "in order for a shelterbelt to survive you have to give it your all. That means watering the trees as you plant them when it's dry, and weeding, weeding, weeding!"

Another project undertaken by the Cooperative was the purchase of a bale shredder in 1986. Although the Carlsons work their straw into the soil, they find that some areas of the fields, especially knolls

Glennis & Gerald Carlson

and hills, require additional organic matter. They use the bale shredder in the fall, shredding unwanted bales from other farmers.

The weed posing the biggest problem for the Carlsons is quackgrass. Depending upon the severity of the quackgrass infestation, some fields are on a six year rotation, while others are on a nine year rotation. They grow spring wheat, durum, canola, oats and fall rye. They have grown winter wheat in the past, but have found it to be a poor competitor with quackgrass. In 1991, the Carlsons are considering replacing their summerfallow with chem fallow. They also have 100 acres of brome-alfalfa hayland and will be seeding more alfalfa in 1991.

When asked why she and Gerald got involved in soil conservation, Glennis replies, "When we started to farm, all our land blew. We've worked hard to keep our land so we want to maintain it in as good or better condition as when we got it. Then if the kids want to farm, there will be some good land to pass on to them."

Gerald and Glennis have learned that conserving soil is a lot of hard work. "Conservation costs money, but it's worth it in the long run," says Glennis. "And you can't worry about what the neighbours think. Some conservation practises may not look good but they sure do good."

Glennis has been a member of the SSCA since its formation. She joined so that she could exchange ideas on soil conservation with people from all over the province. She also serves as the Chairman of District #18 SOS Committee.

Gerald and Glennis, together with their children, Lauri, Tracy and Jerry, own 15 quarters of land and Carlson Trucking.

Participating Organizations:

1) Saskatchewan Rural Development — Extension (Co-Chairman)
2) PFRA — Soil Conservation Service (Co-Chairman)
3) Saskatchewan Soil Conservation Association
4) Saskatchewan Rural Development — Lands
5) Saskatchewan Parks and Renewable Resources—Wildlife Branch
6) Saskatchewan Institute of Pedology — Saskatchewan Soil Survey
7) Agriculture Development Fund
8) Ducks Unlimited Canada

South West Region

1) Jim Pratt (Soils & Crops Agrologist) Swift Current	778-8284
2) Paula Brand (Area Conservationist) Swift Current	773-7255
3) Patricia Flaten (Regional Soil Conservationist) Swift Current	778-8284
4) Greg Haase (Regional Manager) Swift Current	778-8292
5) Chris Dunn (Regional Biologist) Swift Current	778-8205
6) Marie Boehm (Soil Surveyor) Saskatoon	975-5638
7) Chris Ruschkowski (Regional Technology Transfer Coordinator) Moose Jaw	694-3616
8) Doug Fraser (District Agrologist) Regina	569-0424

North West Region

1) Eric Johnson (Soils & Crops Agrologist North Battleford	446-7475
2) Garet Cormin (Area Conservationist) North Battleford	445-6217
3) Blair McClinton (Regional Soil Conservationist) North Battleford	446-7650
4) Al Foster (Land Agrologist) North Battleford	446-7472
5) Wally Kost (Regional Biologist) Saskatoon	993-7942
6) Clint Hilliard (Soil Surveyor) Saskatoon	975-5638
7) Bruce Baumann (Regional Technology Transfer Coordinator), Saskatoon	933-5876
8) Dave O'Bertos (District Agrologist) North Battleford	445-2575

North East Region

1) Roy Button (Soils & Crops Agrologist) Tisdale	873-2585
2) Jason Fradette (Area Conservationist) Melfort	752-4442
3) Garry Meier (Regional Soil Conservationist), Tisdale	873-4290
4) Brian Harris (Land Agrologist) Prince Albert	953-2784
5) Ed Kowal (Regional Biologist) Prince Albert	953-2695
6) Mike Bock (Soil Surveyor) Saskatoon	975-5636
7) Bruce Baumann (Regional Technology Transfer Coordinator) Saskatoon	933-5876
8) Phil Curry (District Argologist) Melfort	752-2791

East Central Region

1) Zane Lewchuk (Soils & Crops Agrologist) Yorkton	786-1508
2) Garry Bank (Area Conservationist) Watrous	946-3303
3) Juanita Polegi (Regional Soil Conservationist), Yorkton	786-1526
4) Brant Kirychuk (Land Agrologist), Canora	563-4100
5) Adam Schmidt (Regional Biologist) Melville	728-4494
6) Rick Stushnoff (Soil Surveyor) Saskatoon	975-5636
7) Ron Kehrig (Regional Technology Transfer Coordinator) Saskatoon	933-5094
8) Dave Struthers (District Agrologist) Yorkton	782-2108

West Central Region

1) Larry Gramiak (Soils & Crops Agrologist) Saskatoon	933-5285
2) Dennis Haak (Area Conservationist) Rosetown	882-4272
3) Garth Patterson (Regional Soil Conservationist) Saskatoon	933-5287
4) David Hryhor (Land Agrologist) Saskatoon	933-5098
5) Wally Kost (Regional Biologist) Saskatoon	933-7492
6) Allan Woloschuk (Soil Surveyor) Saskatoon	975-4307
7) Ron Kehrig (Regional Technology Transfer Coordinator) Saskatoon	933-5094
8) Greg Brewster (Provincial Habitat Biologist), Regina	569-0424

South East Region

1) Dave Shortt (Soils & Crops Agrologist) Weyburn	848-2382
2) Dean Smith (Area Conservationist) Weyburn	842-4624
3) Bob Linnell (Regional Soil Conservationist), Weyburn	848-2381
4) Larry Spearing (Land Agrologist) Moosomin	435-3357
5) Kim Eskowich (Regional Biologist) Redvers	452-6060
6) Alvin Anderson (Soil Surveyor) Saskatoon	975-5640
7) Chris Ruschkowski (Regional Technology Transfer Coordinator), Moose Jaw	694-3616
8) Dave Struthers (District Agrologist), Yorkton	782-2108

By: Garth Patterson and James Lokken

Summerfallow has been a popular method of stabilizing annual crop production throughout Saskatchewan's agricultural history. Farmers still summerfallow approximately one-third of annually cultivated land in Saskatchewan each year. Unfortunately, cultivation to control weeds on summerfallow may leave loose, bare soil which is subject to erosion by wind and water and is not effective in trapping snow.

Annual barriers planted on summerfallow fields provide protection from wind erosion by slowing winds down near ground level. At the same time, they trap snow which may increase stored moisture and contribute to higher crop yields.The barriers are established by planting regular strips of one or more rows of annual crops at right angles to the prevailing winds on fallow fields.

Gary Schweitzer of Eston, the 1991-1992 president of SSCA, has experimented with flax, sunflower and durum wheat barrier strips for a number of years. He finds that "the wind erosion protection is the main part of it. The practice is cheap and can pay off well for the farmer if you get the snowcatch. But if you don't get that, the wind erosion protection is very important."

Schweitzer usually grows lentils after summerfallow. He applies trifluralin in the summerfallow year in late June-early July to control weeds in both the summerfallow and the succeeding lentil crop. While incorporating the trifluralin, he seeds flax strips with a barrier seeder mounted on his heavy duty cultivator. The strips are planted at right angles to the prevailing northwest winds.

The K-Hart barrier seeder that Schweitzer uses has a two bushel seedbox and a scatter boot which seeds one wide row. His cultivator is 35 feet wide, so he seeds about 1/35 (or 3%) of each acre. The flax is seeded at a heavy rate to ensure a dense stand, but the small size of flaxseed means that a large area can be covered without having to refill the seeder.

Barrier seeders cost about $800 to purchase. There are also maintenance and repair costs, as with any machine. The actual cost of seeding the flax is a small amount of labour and the price of the flaxseed. If the seeding is done during a cultivation, there is no extra field operation. The cost of the trifluralin is a cost of growing lentils, although it does control weeds in the strips. If seed flax is $7.00 per bushel, the cost of the seed, at a seeding rate of 30 lb. per acre and 3% of each acre seeded, is less than 15 cents per acre.

Flax produces quite a dense, stiff growth that is effective at slowing the wind. However, flax is sensitive to seeding depth which can be difficult to control with a seeder mounted on a cultivator. Grasshoppers and lack of moisture can also be major problems at the late seeding date for barrier strips.

Schweitzer does not cultivate again until seeding the next spring, but other farmers remove shanks from their cultivators and straddle the barriers. Some farmers have found that seeders which plant two or more rows are useful because of the possibility of damaging some of the plants when cultivating a single row. Mervin Lloyd of D'arcy plants a double row of a flax-mustard mixture, finding that where the flax doesn't do well in a part of a field, the mustard often does and vice versa.

Gary Schweitzer finds that sunflowers have some positive characteristics as a barrier crop. Sunflowers will germinate even when planted as deep as 5 inches. They also seem to be able to keep growing under severe grasshopper attack. However, sunflowers are large seeded and barrier seeders have limited seedbox capacity, so more labour is used during seeding to refill at frequent intervals. Sunflowers also lose most of their leaves in the fall so may provide limited protection from the wind unless planted very close together. At a heavy seeding rate of 20 lb. per acre, a price of 50 cents per lb., and 3% of each acre seeded, sunflowers cost about 30 cents per acre for the seed. Given the advantages and disadvantages of flax and sunflowers when used as annual barrier strips, Schweitzer has thought of mixing them together in some form to try to capitalize on each of their strengths.

Durum strips planted in the lentil crop are an unusual adaptation of annual barriers that Schweitzer uses. He uses

cont'd on page 4

Change in Fees:

Effective April 1,1991
Full Membership (Agriculture Producers)
1 year $ 50.00
3 years $ 100.00
Associate Membership (Non-Producer)
1 year $ 50.00
3 years $ 100.00
Supporting Membership (Institutions)
1 year $ 500.00
3 years $1,000.00

Membership Enhancement Program:

If you are presently a member of the SSCA and wish to help the Association by recruiting new members, both you and the Association can benefit from your efforts. For every six (6) memberships *sold in one* year by you as a member, you will receive an additional 3 years membership as a bonus.

To qualify, print your name on the applications you sell and forward the application plus membership fees to the SSCA. Applications may be sent individually or as a group. All memberships received by the SSCA between 01 April and 31 March of each year will be counted towards this Membership Enhancement Program.

By: Gerald Girodat, Shaunavon

Over the past several years, I've tried different ways to reduce tillage on summerfallow. I'd now like to take this opportunity to share some of my experiences and throw out some ideas for you to consider before next summerfallow season comes around.

First of all, maybe there is some land on your farm that shouldn't be summerfallowed at all. I'm thinking now of land that's prone to salinity problems or shows definite signs of increasing salinity. I feel that all indications are pointing to the fact that the most economical use of this land would be in forage crops for hay pasture or seed production. In my own case, because I do produce some pedigree seed, I've experimented with establishing slender wheatgrass on some moderate to severely saline ground. It's gratifying to finally see a productive crop growing on this land, and it appears the returns from the seed produced will be superior to any cereal crop I've tried to grow in the past. Forage crops should be considered a cash crop as much as wheat or barley and when we consider the amount of hay that's trucked into the southwest every year, there is always a market for this crop.

Now as far as reducing tillage on the land you do summerfallow, a reduced tillage program begins in the fall when you harvest the crop off the field that's going to be summerfallowed next year. It is important to get straw and chaff spread evenly in order to get a good weed kill from the first application of 2,4-D. In my case, I have a straw storm on the combine and although it does a good job, the maintenance has been fairly high. There are some alternative attachments on the market which I'd certainly look at when the 'storm' needs to be replaced. Another advantage of a good straw spread is if moisture conditions in the stubble are right, you have the start of a good seed bed for a stubble crop.

For the past eight years, I've been spraying part or all of my stubble in the fall or spring with 2,4-D. In general, I'd say this has saved at least one, if not two tillage operations. In years where there is a light trash cover, I've sprayed the summerfallow with 2,4-D as the last operation in the fall. I found this worked especially well after a wet fall like 1989. The 2,4-D gets the winter annuals and the frost looks after the late germinating wild oats and volunteer grain. It's been my observation that cultivating land much; later than the third week of September in our area is risky as it never seems to pack again and if the trash cover is light, it lays loose and is subject to wind erosion all winter.

Complete chemical summerfallow has been used on certain fields on my farm over the past ten years with various degrees of success. I've tried it on the fields that are most subject to wind and water erosion, that is, light land on a very rolling topography. The observation I have made is that its success is very dependant on what weeds you are working against, stage of weed growth, moisture conditions at time of spraying and moisture received throughout the summer. It can be expensive, however, I have gotten by as cheaply as two applications of 2,4-D and it has always replaced at least two cultivations. For several years, my summerfallow program on certain fields has consisted of one application of 2,4-D, one application of Roundup and Banvel (Rustler in later years) and one tillage operation with a cultivator and mounted hydraulic driven rod.

Gerald Girodat

The use of a hydraulic driver rod weeder attachment has been part of my tillage program on summerfallow since 1980. It has allowed for reduced tillage speeds and still gives a good weed kill and I've been surprised at the amount of trash it will go through. In fact, we always use it first time over. It's true that it is more time consuming and a nuisance connecting and disconnecting the rod between fields, but it leaves the stubble stand much like a blade and rolls out the roots of volunteer grain and weeds to the surface.

In general, my approach to trash management for erosion control is to try and visualize what that summerfallow field is going to look like by the time you come to seed it. If the previous crop was light, it's obvious very careful management of your summerfallow system is going to have to take place to maintain trash cover until the land is seeded again.

These are just a few of my observations on one aspect of soil conservation and I'm sure every one who reads this has many personal experiences and ideas to share. For those members in particular who live in the southwest and would like to share some of their concerns about soil conservation, please contact me at Box 664, Shaunavon, Sask., S0N 2M0 or call 297-2913.

By: Eric Johnson
Soils and Crops Agrologist
North Battleford

Since the introduction of chemical pesticides many producers have adopted a quick fix solution to pest problems. Once a pest is identified the common question is, "What do I spray it with?" While pesticides are an important component of pest control, they are only part of the solution.

Every year, too much "pesticide insurance" is applied. In other words, too many times a pesticide is applied just because the pest is present. Decisions are not based on whether the pest is doing economic damage.

There is merit in controlling some pests before they cause economic damage. For example, controlling an introduced competitive weed before it becomes widespread in your fields is good pest management. However, controlling insect populations below economic thresholds is financially and ecologically undesirable.

Regular field scouting is necessary to manage crop pests. It is important to know the biology of the pest, it's life cycle, it's predators, and it's economic thresholds. Economic thresholds are not available for all pests, however they have been determined for the more common field crop pests of the prairies.

Some economic thresholds for common insect pests are:

- English grain aphid in cereals - 70 or more aphids/tiller prior to the boot stage
- flea beetles in canola - when 25 percent of the surface area of cotyledon is destroyed
- diamondback moths in canola - 200 to 300 larvae/square meter;
- grasshoppers - 7 to 9 grasshoppers/square meter, (may be lower under poor growing conditions)
- bertha armyworm in canola - 20 to 30 larvae per square meter or as soon as they start feeding on seed pods

Economic thresholds have been developed for weeds such as wild oats and Canada thistle.

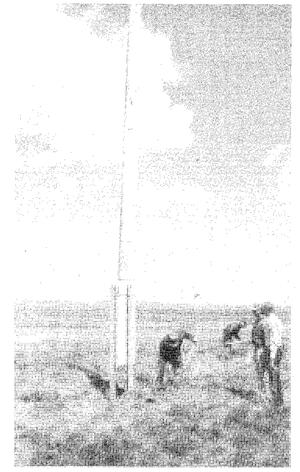
Crop rotation can play an important role in controlling crop pests, particularly crop diseases. Crop rotation can reduce the severity of blackleg in canola. Canola should not be grown on a field more frequently than once every four years.

Researchers at the Crop Development Center in Saskatoon found that crop rotation can reduce yield losses from Septoria leaf diseases in wheat. The highest yield losses from Septoria occurred on plots where wheat was seeded on wheat stubble. There was no significant yield loss where wheat was seeded on plots that had two previous years of broadleaf crops.

There have been novel ways developed to forecast potential pest problems. Petal infection tests can be used to forecast Sclerotinia stem rot in canola. Suction traps have been placed at sites throughout Saskatchewan to monitor for Russian Wheat Aphids.

Extension staff, with assistance from cooperating farmers, use pheromone traps to annually monitor for insects such as bertha armyworms. There may be a need for more cooperating farmers this year because of the potential for a bertha armyworm outbreak in the northwest part of the province.

There are many good publications on pest management available at Rural Service Centers.



Russian Wheat Aphid Suction Trap.

Sustaining Farm Profits (HRM short course)
Vermilion, Alberta
March 11-13, 1991
Mary Holtman (Taber, Alta.)
(403) 223-3065

Crop Prospects '91
March 20, 1991
Televised over the Saskatchewan Communications Network

National Soil Conservation Week
April 8-14, 1991

National Wildlife Week
April 8-14, 1991

Encounters with Saskatchewan's ENDANGERED SPACES
A mix of lectures and field trips to begin April 11, 1991, University of Saskatchewan. For more information, call: Peter Jonker ph: (403) 966-5539 — Fax: (403) 966-5567

Reminder: June 1, 1991
That the Shelterbelt Centre begins accepting applications for 1992 trees.

Grasslands Conference
The Second National Heritage Forum, "Grasslands—A Threatened Heritage," will be held June 4, 1991, at the University of Regina. For more information, call Dr. David Gauthier, U of R, at 585-4154

Western Canada Farm Progress Show
June 19-22, 1991
Ph: (306) 781-9200 for more information

Do you have ideas or comments on the conservation of our land resource? We would like to print them in future issues of the Prairie Steward.
(Pertinent photographs would be appreciated)
Please forward to:

Prairie Steward
c/o SSCA
132 - 3085 Albert Street
Regina, Sask.
S4S 0B1

durum rather than spring wheat only because he grows no spring wheat. He notes that spring wheat probably would provide a superior barrier because of the strength of the stem. Durum is seeded in one run out of 90 with a 42.5 foot discer. A 22 foot straight cut header on the combine leaves the durum strips standing after harvest. They are left to trap snow that the short lentil stubble cannot collect. The land taken up by the durum strips reduces lentil production by as much as 2%. However, in Schweitzer's estimation, the moisture-storing potential that the durum strips provide for the benefit of future crops outweighs the loss in production.

Annual barriers on fallow are useful both for reducing soil drifting and for snowtrapping. Schweitzer observes that "we're getting fairly good wind erosion protection, and at the same time we're generally seeing a yield response in the following crop. We think that's because of the snow trap and snow management. I think I've seen anywhere from yield reductions to situations where we made 30 or 40 dollars an acre more."

Producers who wish to plant barrier strips should consider the following recommendations:

1) Seeding of barriers should be included in a summerfallow operation to keep costs down, but may be done in a separate operation.
2) Results from Agriculture Canada at Swift Current indicate that flax, mustard or spring wheat provide the best barriers. However, other crops such as canola, sunflowers, durum and peas can be used.
3) Barriers can be difficult to establish in very dry years and are also susceptible to damage from insects, especially grasshoppers. Mustard, sunflowers and some pea varieties appear to be more resistant to insects.
4) Seeding from late June to mid-July, depending on your area, will result in a strong stand with no seed set. The seeding rate should be at least as high as recommended for spring seeding of the crop. Seeding too late results in an immature stand which may collapse when frozen.
5) The barriers should be seeded at right angles to the prevailing winds to give optimal protection (northeast to southwest in most of Saskatchewan).
6) Strips should be spaced conveniently to allow for future cultivations between the rows as necessary. Recommended spacings are from 25 to 40 feet, as wider rows will offer little protection from the wind. Removing one or two cultivator shanks and straddling the barrier will result in less damage to the barrier during cultivation.
7) Consideration should be given to the number of crop rows per strip. Three rows at twelve inch spacings provide a good barrier, but one or two rows are more popular due to less problems with weeds between the rows.
8) It is important that barriers remain weed free. Chemical weed control may be required.
9) Yellowing and reduced height in following crops, due to less nutrients and moisture, have been observed in some instances. This could be reduced by broadcasting 30 to 40 lbs/acre of nitrogen on the barrier strips. Agriculture Canada at Swift Current is studying the effects of weed control and fertilization on the performance of annual barriers.
10) The strongest winds and greatest wind erosion potential occur in the spring on freshly seeded summerfallow fields. Direct seeding through the barrier strips will provide more protection during this critical period.

Gary Schweitzer Examines Flax Barriers Near Eston

Most commercial barrier strip seeders mount on the rear of a cultivator, rodweeder, or wideblade with the seed fed by a twelve volt motor controlled from the tractor cab. Turner Welding in Kyle, Sask. makes a two bushel capacity unit that has two adjustable seed cups and packer wheels. K-Hart Barrier Seeders in Elrose, Sask. makes a single cup seeder of two bushel capacity. It has a seed scatter boot and a shank mounted packer wheel. Dutch Agri Products of Sedley, Sask. sells a Gandy-built seeder with a 1.25 bushel capacity. There are two seed tubes with a variety of seed boot and packer wheel attachments available. Beline Manufacturing of Kindersley, Sask. produces a one bushel capacity seeder with up to four seed outlets. Packer wheels are also available. Agriculture Canada at Swift Currrent will make plans available to producers who wish to make their own barrier strip seeder.

Annual barrier strips cost only a few cents an acre, are effective in reducing wind speed and increase snowtrapping potential. Consider including this valuable conservation tool in your farming operation.

By: Blair McClinton and James Lokken

Successful farming requires timeliness of operations and high productivity of labour and machinery. Ever since tractors replaced horses as the main power source on farms, tillage speeds have steadily increased in pursuit of this timeliness and productivity. Perhaps the availability of tractor power and increased operator comfort have also influenced speeds. In the past few years, conservationists have expressed concern about the impact of these high tillage speeds on soil. Evidence shows that high tillage speeds are an identifiable active cause of soil erosion .

Just what is too fast when talking about tillage speed? Farmers normally pull cultivators at speeds of 5 to 6.5 m.p.h. on the advice of tractor manufacturers. Herbicide manufacturers recommend incorporation of some products at the upper end of this speed range or even faster. Some operators cultivate as fast as their personal comfort will allow.

On the other hand, soil scientists and conservationists note that soil is moved and disturbed extensively, clods are reduced in size, and crop residue is buried faster at high tillage speeds. The soil is left more vulnerable to erosion. Implements also receive more punishment at high speeds.

Tractor manufacturers encourage farmers to drive as fast as possible. One reason is that drive trains may last significantly longer at faster ground speeds. As one agricultural writer has noted (while not endorsing these high speeds himself): "From the tractor's point of view, it is hard to find much of a downside to faster travel speed until the ride in the cab gets too rough to adjust the radio comfortably".[1]

Case-International used the following estimates in one publication:[2]

Tillage Speed (full load)	Estimated Transmission Life
5.0 m.p.h.	10,000 hours
4.0 m.p.h.	6,500 hours
3.5 m.p.h.	1,700 hours

This is a good argument for **not** travelling below 4 m.p.h. at full load. Manufacturers presently design agricultural tractors to pull a full load at 5 m.p.h. The reason slow speeds can have such a dramatic effect on the life of a transmission is the relationship between power, torque and speed.

Power = Torque x Shaft Speed = Draft x Ground Speed

These are simplified versions of the power equations. According to them, if ground speed is reduced by 20%, maintaining the power at the previous level requires a 20 increase in the torque (or twisting action on rotating shafts). If torque remains the same when ground speed is reduced by 20%, power is reduced by 20%.

Thus, farmers should size their implements for full tractor load at 5 m.p.h. even if operating at slower speeds, if long drive train life is to be achieved. Slowing down will not cause drive train problems for most farmers, since tillage equipment is now often sized so that the tractor is not pulling at full load until 6 or more m.p.h.. These farmers will have unused tractor power at lower speeds if they do not increase the width of their implements.

Excess tire wear is also cited as a problem of lower ground speeds. This only happens when there is excess slippage (over 15%). It can be corrected by adding **just enough** ballast to bring slippage into the optimum range of 10-15% for 2-wheel drive and 8-12% for 4-wheel drive tractors. Overballasting to reduce slippage below the optimum range may prevent the tires from "spinning out" when overloaded, increasing the strain on the drive train. Increased ballast will increase the rolling resistance of the tractor because the extra weight causes it to sink deeper in the soil. Pushing through more soil will rob the tractor of some power. This loss should not be great in Saskatchewan soil conditions where we usually till neither deep nor in wet conditions.

The field capacity of tractor/implement combinations is important in the speed debate. Field capacity is simply how many acres can be worked in one hour. The following is an example of field capacity based on average power requirements of chisel plows.[3] A 175 h.p. tractor can pull 30 feet of cultivator at 6 m.p.h. or 36 ft at 5 m.p.h.. The theoretical field capacity of either combination is 21.8 acres per hour. In the real world, the larger unit should cover slightly more acres per hour than the smaller unit because it would make fewer turns per acre. It would have a higher field efficiency, a term which refers to time used in turning and making machine adjustments, etc.

Why don't farmers size their equipment for slower speeds? Based on tractor manufacturers' warnings about the effects of slow speed on drive trains, farmers possibly view higher speeds with smaller equipment as a safe way to increase productivity. It is easier and cheaper to fix or replace an implement than a tractor. Tillage can always be done in less than optimal conditions if there is some power to spare. Weed kill also tends to be better at higher speeds.

Farmers have often increased the size of their tractors without a corresponding increase in implement size. Increased speed is then seen as the only way to increase field capacity, although many cultivators could be made larger by adding shanks for an extra two to four feet in width.

It is fairly easy to relate a farming practice such as tillage speed to machinery size and wear, field capacities or current costs. It is more difficult to relate present farming practices to the costs or benefits associated with soil loss or preservation. This is true for both farmers and scientists.

A graphic example of the effect tillage speeds have on soil conservation is the comparison of levels of crop residues left on the surface of the soil at different tillage speeds. Less residue cover means less protection for the soil from wind and water.

Crop Residues Left as a Percentage of Original Residues[4]
(Field Cultivator)

Number of Tillage Operations	Speed of Operation (m.p.h.) 3.1	6.25	9.4
2	57.7	34.1	26.0
4	43.4	22.5	11.9
6	30.9	12.8	6.0
8	18.5	8.2	3.0

If residue cover is a partial measure of the protection soil has from erosion, tillage speed is closely related to soil conservation. Each year that soil is left unprotected means a greater cumulative loss of topsoil. One inch of topsoil lost over an acre of land equals 125-150 tons lost per acre. That much topsoil loss has been estimated to reduce wheat yields by 1.5-2.5 bushels per acre per year.[5] A topsoil loss of 5 tons per acre per year (or one millimeter of depth) may be acceptable, if good farming practices are returning organic matter to the soil at high levels.

Farmers concerned about soil conservation face trade-offs between current costs and future benefits. However, current costs of slowing down do not have to be as high as often thought. Industry recommends sizing draft implements such as cultivators and drills for full tractor load at 5 m.p.h.. It is then safe to throttle back to 3 or 4 m.p.h. without any excess wear on the drive train. Some implements such as wide blades and most seed drills work best at these slower speeds. Extra power will be available for variations in soil conditions. This is an acceptable loss in field capacity and labour productivity to gain some erosion control.

Many fields require slow tillage for maintenance of soil structure and residue levels. It is worth sacrificing some time to keep the soil in place.

[1]Bob Horne. "Maintaining Machinery." **Farm Light and Power.** Regina, April 1990, p.B4.

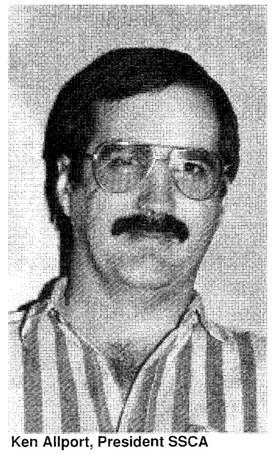
[2]Case-International. **Rapid Farming System.** Product Information Form RF-8-85, p.17.

[3]Prairie Agriculture Machinery Institute. Humboldt. Report No. 547. 1989, p.7.

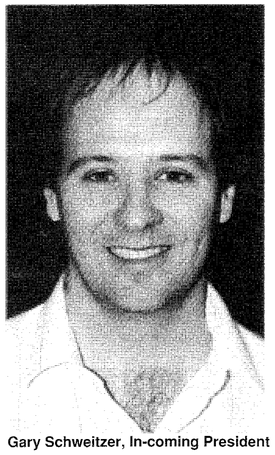
[4]Stewart A. Brandt. **Tillage and Crop Residue Management Study.** Scott Agriculture Canada. 1989, p.31.

[5]PFRA. **On-Farm Economics of ERDA Soil Conservation Projects**. Regina. 1988, p.15.

The Newsletter of the Saskatchewan Soil Conservation Association Inc.



Ken Allport, President SSCA



Gary Schweitzer, In-coming President

I hope this edition of PRAIRIE STEWARD finds you in good health and your region deeply covered in snow. Several areas had good crops last fall so it provided the opportunity to practise trash management. If you were fortunate enough to have good cover after harvest I hope you were able to "Keep Your Stubble Up". Winter is a time when we often put the past crop year behind us as we prepare for the coming season. However soil conservation goes on year round. One concern, that remains even with the winter snowfall, is the lack of reserve moisture. It will continue to impact the way we farm and conserve our resources.

SSCA/SCC Joint Annual Meeting

This year we are pleased to be hosting our annual meeting in conjunction with Soil Conservation Canada (SCC). The joint meeting will be underway at the time that this edition of the Prairie Steward is released, so I would like to welcome those of you who are able to attend.

An excellent program has been planned and we look forward to exchanging ideas, reviewing developments, seeing the latest conservation equipment and increasing the awareness of conservation activities in Saskatchewan and across the country.

A special workshop on Holistic Resource Management promises to provide insight into managing our human, financial and biological resources in an economical and practical manner. Since long term conservation is in the hands of future generations, teachers and students are also actively involved in the meeting. The Trade Show will provide an opportunity for delegates to see and talk with people who are involved in providing techiques, equipment and leadership in conservation.

For those unable to attend this year I suggest marking it on your calendar for next year. It is an excellent meeting, one you will be glad you attended.

New Board and Staff Members

I am pleased to announce that we have some new members on the Board and Staff. Marv Fenrich, from Wilkie, has filled the Director position for the North West. Terry Pearse, from Tisdale, and Ken Sapsford, from Perdue, will be taking over as the Directors for the North East and West Central districts respectively.

We have also filled two positions with our Central staff. Guy Chartier is our new Communications Specialist. Guy's formal training consists of a degree in Journalism and Communications from the University of Regina. He has extensive practical experience in the fields of communications and public relations, having operated his own firm dealing with all aspects of communication and event management. Howard Fox is our new Soil Conservation Specialist (Shelterbelts). Howard comes to us with a degree in Agriculture from the University of Saskatchewan and several years of experience with the PFRA Shelterbelt Centre at Indian Head. Welcome to all the new Board and Staff members. We look forward to gaining from your knowledge and experience.

SSCA as a Whole

SSCA has had a very busy year. One of our major activities has been fulfilling our contract with ADF in delivering the extension, education and awareness components of the Save Our Soils (SOS) program. The program has been in effect for more than one full year and has had many successes in conserving our soil. This program is delivered to producers at the local ADD Board level so as to be responsive to local needs and interests. SSCA members have been very involved in providing input to the direction of the SOS program at the provincial, regional and local levels. I commend your interest and desire in providing leadership to this program.

Although the SOS program is one of SSCA's major activities it is not its only component. SSCA was initiated before the SOS program began and it will continue after the SOS program has ended. Membership, as well as diversity in the membership, continues to grow. One of the many benefits of being a member is the opportunity to voice your concerns and ideas for the present and future programs affecting agriculture and specifically soil conservation. One voice may not be heard but a strong organization, such as ours, certainly has impact and is listened to.

SSCA is a producer-driven organization and will continue to be. However, we also recognize that there are other individuals and organizations, that are not bonafide farmers, but who share our concern for conserving our resources. In light of that, I will be proposing a resolution at our annual meeting that all members be given full privileges within our organization. This will permit these other interested individuals and organizations to become active participants, and not observers, within our organization. We all serve to gain from this change in structure. As producers we will gain from their knowledge and experience as they will gain from the producers' knowledge and experience. The majority of the members will still be producers so the organization will not be watered down or lose its effectiveness and responsiveness as a producer-driven organization serving producers specifically and conservation as a whole.

Wrap Up

This will be my last President's Message as Gary Schweitzer will be assuming the role of President at the end of our Annual Meeting. I'd like to wish Gary and the rest of the Board the best of luck as they enter the next phase of the SSCA. I'd also like to recognize and compliment the Board, Staff and Membership as a whole for their cooperation, expertise, vision, hard work and commitment to conservation and the SSCA organization. It has been a very rewarding and personally fulfilling year. We can be very proud of our contributions and the role we have taken in providing leadership to soil conservation in Saskatchewan and Canada. I encourage all members to become involved with the organization. It is certainly challenging but very rewarding to work with a producer - driven, grassroots organization. Regardless of where we live, how old we are or what we produce, we share the same common concerns: our families, our soil and our childrens' futures.

Kenneth Allport

Ken Allport
President, SSCA

SPREAD THE WORD
April 8-14, 1991
is
National Soil Conservation Week

In cooperation with the Agriculture Development Fund

132-3085 Albert Street,
Regina, Saskatchewan S4S 0B1
(306) 787-0558
John J. Kiss, Executive Manager
Carolyn Fife, Office Manager
Guy Chartier, Communications Specialist

Soil Conservation Specialists
Howard Fox, Shelterbelts
Nancy Fraser, Range and Pasture Management
James Lokken, Conservation Economics
Steve Paquette, Weed Control and Tillage

Regional Soil Conservationists
Blair McClinton, North Battleford, 446-7650
Garry Meier, Tisdale, 873-4290
Garth Patterson, Saskatoon, 933-5287
Juanita Polegi, Yorkton, 786-1526
Pat Flaten, Swift Current, 778-8284
Bob Linnell, Weyburn, 848-2381

TIME TO "GET SMART"

By: Gerry Willerth and Bob Linnell

This is the beginning of a new season to "Get Smart" about soil conservation methods that you and I can use on our own farms, without spending a whole bunch of money, or adopting an entirely new way of life on and around the farm. We know that there are farmers near each of you that continue to use their traditional methods of farming with some degree of success, but there are a lot of these same farmers who are at a loss to know what to do when they are presented with a really bad case of erosion on their own farm, and worse, don't know or realize what they may have done to cause the problem.

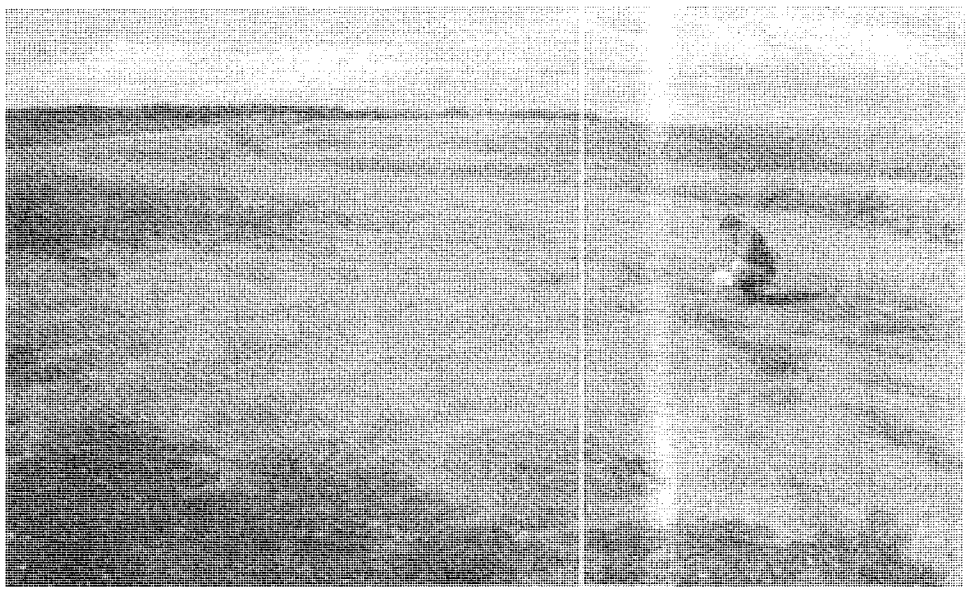
Every district in the southeast has had one full year of project development and testing, and have shown the results to their neighbors in the form of a demonstration or tour of the farms in their district. These tours have been real eye openers for many owners, and have proved to their non believer neighbors that what they have been doing for some time, does pay. Soil Conservation is in everyone's' hands and that we have to not only learn about it, we have to use that knowledge and work effectively to continue to make it work for each of us in our own operation.

One of the most valuable and effective tools for learning is the producer information meeting, and we would like you to make a special effort to watch for the soil conservation meetings in your area, and attend those you can. We encourage you to tell people at those meetings about your experiences in conservation, and where possible, to take a couple of your neighbors to the meeting so they might benefit from the education of others.

The SSCA also encourages you to tell others of your "Good Ideas That Work", at those meetings. Many of you have good ideas that work for you and could work for others in your community, or your club, or farmers group. If you wish to let others know of your idea or even theory, please write the SSCA and tell them, so everyone can, at least, try a new method in soil conservation.

Those fields that have had some snow trapping methods installed this fall will be closely watched this winter to see how well they work, as will many that have ridging being tried as the method to increase the moisture retention, and allow extended cropping as an alternative to the traditional rotations in those areas. Non-tillage fallow will also prove very valuable this winter as an effective method of preventing erosion, and combined with several direct seeding trials in the spring should bring even more results to show the positive benefits of planned soil conservation.

We encourage you to try more conservation methods this year under the Save Our Soils Program, and remind you to contact your nearest district soil technician, for application forms as soon as the year's projects have been announced. Application forms are alsonormally available in Regional Extension Agrologists' Offices or at Rural Municipal Offices, as well as SSCA Offices throughout the province.



Spring Soil Drifting.

Students Get First Hand Experience.

RECIPE NEEDED

By: Fred D. Phillips and Juanita Polegi

Snow falling in early December covered up eroded fields. Prior to the heavy snowfall, the ditches along every highway in all parts of the region were dusted with topsoil. Worked stubble and summerfallow fields offered little defence against the relentless wind. It appears that those of us interested in soil conservation in this region have a lot of work to do yet!

The RCT is encouraging the districts in the region to review their 1990 projects and try to determine why some projects were so successful while others didn't run quite so smoothly. As a result of these reflections, we expect the districts will develop a "recipe" for the various practises prospective cooperators may wish to undertake. The formula, together with the Technician spending more time with each cooperator prior to the start of a project, should ensure the projects are of a higher quality in years 2 and 3 of the SOS program.

Save Our Soils Committee Meetings are being held in the districts to pay cooperators, prepare reports and plan this winter's extension program. Members of this RCT will be available to help resource some of the producer meetings.

In addition to attending District SOS Committee Meetings, Juanita has visited some rural schools, speaking to grades 5 and 6 students on the importance of soil and soil conservation. The students have been a great group to work with as they're full of questions and eager to learn.

The Technicians attended a Conservation Course in December. Organized by the RCT, presentations were made to the Technicians on a variety of topics including programs offered by Ducks Unlimited; salinity and its management; forages; the effectiveness of shelterbelts; under-standing wind and water erosion factors; and how to grab media attention.

There are many people in this Region who know that soil conservation measures should be undertaken. Encouraging those people to not only think about soil conservation but also practice conservation will be a task of all of us who are already committed to the soil conservation philosophy in the months ahead.

INNOVATIVE TECHNIQUES

By: Dave Bueckert and Garth Patterson

The West Central SSCA meeting in Outlook on December 6 turned out to be a success. Ken Allport addressed members and discussed the role and ethics of the SSCA. The producer panel on innovative production techniques turned out to be the hit of the day! Bill Boyd from Eston described his crop — fallow rotation. His land doesn't see the cultivator, as he direct seeds using aqu-planter double offset disc openers and has a cost effective chemfallow program. John Bennett from Biggar described how he has reduced water erosion on his hilly land by continuous cropping and direct seeding using a Haybuster hoe drill. Darrell Lyons of Brock was tired of watching his soil blow and organized a shelterbelt club which has now planted over 200 km of trees. They also make extensive use of forages in their crop rotation. Marc Loiselle of Vonda turned to organic farming in the mid 1980's because he was concerned about the health of the land. Trees have been planted to reduce soil erosion, conserve moisture and provide wildlife habitat. Forages are an integral part of the rotation, and weeds are now controlled through crop rotation and post seeding harrowing. The presentations by these producers created a lot of questions and resulted in lengthy discussions over the lunch break.

Allan Patkau of Hanley gave a very interesting presentation (on short notice!) about time controlled grazing. He was able to convert 160 acres of saline, erodible land of low productivity into highly productive rangeland. Alfalfa and 9 variety of grasses were seeded, and the land was fenced off into small paddocks of 12 to 15 acres. By only allowing cattle in each area for a short period of time, and then resting the area, Allan has been able to improve the health of his rangeland and increase production.

Ken Sapsford, the SOS technician for the Biggar District summarized the conservation program in their area. Residue management to control wind and water erosion is a key part of their program. Their three wide blade cultivators covered over 8,500 acres in 1990! Residue management also included a prescribed fallow program consisting of 2,4-D followed by Rustler and a cultivation. More residue was conserved when the cultivation was performed at the beginning of the season (i.e. before the Rustler) compared to when Rustler was first applied and the cultivation later on more weathered stubble. Their district also has a successful shelterbelt program being run on a contract basis.

Gary Schweitzer, SSCA's President Elect then chaired a session on government policies affecting soil conservation. An excellent presentation was made by James Lokken, SSCA's economist. James summarized how the quota system, crop insurance, land assessment and ad hoc programs affect soil conservation. The meeting then broke into small discussion groups and later regrouped to summarize opinions. There was not much agreement on how policies could be changed! On a survey filled out later, most participants indicated that they were more interested in gathering technical information than discussing government policy.

We hope to hold this kind of meeting on an annual basis, and look forward to your input.

SSCA Policy Meeting in Outlook.

MOWING CROP RESIDUES TO MINIMIZE TILLAGE

By: Blair McClinton
Regional Soil Conservationist

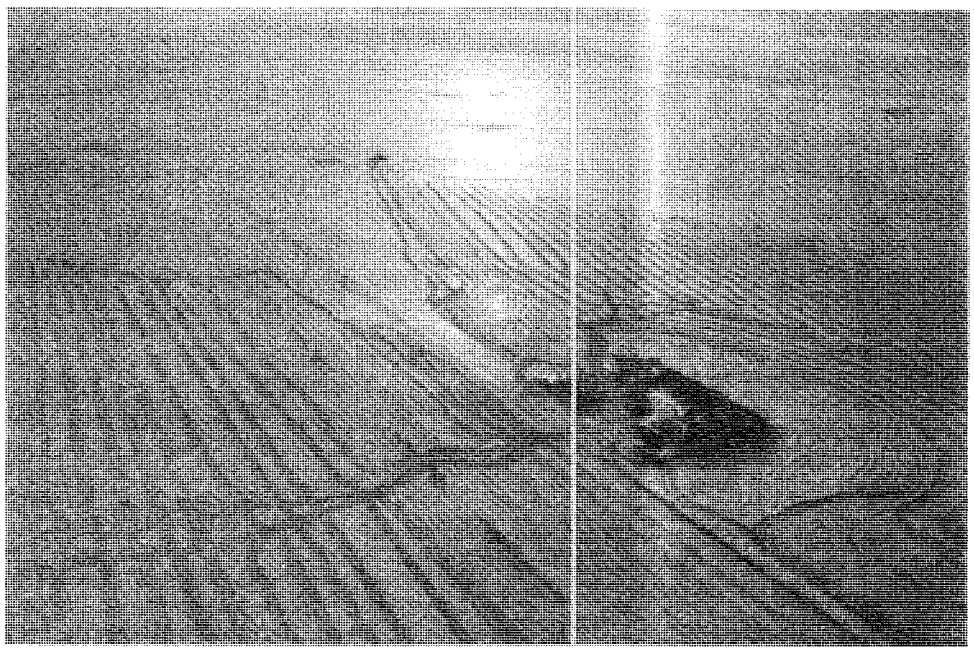
The 1990 crop was one of the largest in Saskatchewan's history. This large crop also produced large amounts of crop residues. Many producers could have problems managing residues this spring.

Stubble burning is one traditional way to deal with heavy residues, however, valuable nutrients are lost forever when stubble is burned. Tillage is the other traditional method to manage residues. Excess tillage to bury residue can leave the soil prone to erosion. It can also dry the soil out resulting in uneven germination.

Some producers have found mowing crop residues to be an effective way to manage large amounts of residue. Producers who mow their residues are eliminating at least two tillage operations under heavy trash conditions. In the Nampa district in northern Alberta, it was estimated that mowing residues prevented 4000 acres from being burned last spring. Those farmers rented rotary mowers from the local municipality.

The best time to mow residues is in the spring. Mowing residues in the spring gives producers the benefits of snow management while helping eliminate trash clearance problems during seeding. Most hoe drills and air seeders can direct seed into mowed residues. Producers using disc drills can prepare the seedbed in fewer operations helping to maintain residues and soil mositure.

Crop Shredder a Better Alternative.



Snow Ridging (Courtesy PFRA).

BENGOUGH SHELTERBELT CLUB

By: Patricia Flaten
Regional Soil Conservationist

Twenty shelterbelt clubs were active in Saskatchewan this past year. The ERDA and SOS programs have contributed to them forming by providing technical and financial assistance, but it has been individual farmers who have taken the initiative to set the ball rolling in local communities.

Mike Coroluick believes in shelterbelts. That's why he and several neighbours created the Bengough Shelterbelt Club, southeast of Assiniboia. Since 1987, they have established 150 miles of trees and shrubs and they haven't quit yet! Next year, another 27 miles are scheduled to be planted.

Some of the inspiration has come from seeing the shelterbelt system developed since 1935 in the Conquest - Outlook area. Benefits that Conquest farmers see are increased yields, reduced wind speeds and reduced snow removal costs.

Most of us prairie-dwellers know the long-term advantages of shelterbelts. The most common reason for not planting them is because they take time and effort.

Time and effort - this is why a club seemed so logical to this club's founder, Mike Coroluick. Not only would the club get the job done quickly and efficiently, but they'd have fun doing it!

In 1986 Coroluick gathered 15 members together. Their initial goal was to each commit himself to an annual planting of three rows on a half section. Close to 50 miles were planted in each of the three years, 1987-1989.

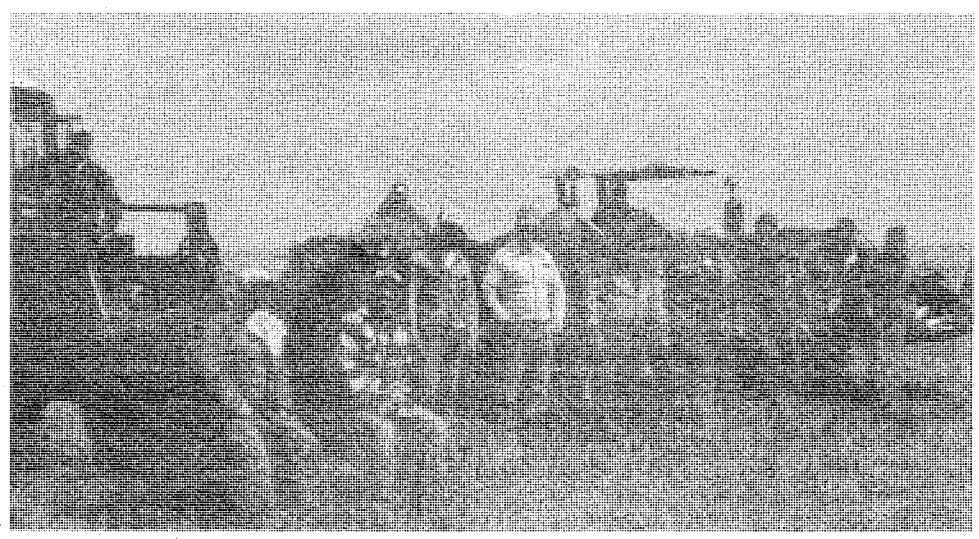
Through this experience, the club has developed a planting and weed control system which they believe works best. One year before planting, the lines are surveyed and staked. During that year, the strip is cultivated and a trifluralin application is split between the fall and spring before planting.

The Club has operated as many as three tree planters at the same time, each with a 4-5 man crew. Each crew consists of a tractordriver, two planters and one or two people to supply the tree bundles and ensure that the trees are placed in the soil properly.

Occasionally, members plant green ash or a wildlife species such as chokecherry or buffaloberry, but their principal shelterbelt species is caragana. They like Caragana because it is an effective barrier, does not compete with adjacent crops as much as other species, and survives harsh conditions.

One member, Stephen King, comments that "probably the most important thing is to work the strip during the year before planting". Pre-planting tillage and herbicides give them a good start on weed control, but eventually the shelterbelts have to be cultivated. This fall, two members have been building their own 6 foot wide discers. The club will try to keep the rows as free of weeds as possible in the first few critical years. After that, the trees have to fend for themselves.

The Bengough Shelterbelt Club will have to wait for 5-8 years before they'll really start to see the impact of their work. For now, that vision and the comradery of this barn-raising project will keep them coming back to the tree planter in the spring.



Tree Planters Ready for Work

SNOW RIDGING FOR MOISTURE CONSERVATION

By: Garry Meier
Regional Soil Conservationist

Trapping blowing snow by creating ridges with a tractor plow to try and enhance our soil moisture reserves in our Saskatchewan fields is not a new idea. It is a practice that has been tried on a sporadic basis for many years by farmers. Our very dry soils over much ofSaskatchewan after the 1990 crop has again renewed interest in this practice. With many farmers facing very tight operating budgets, farmers must also assess the economics of such an operation.

Unfortunately research data is scarce on the topic. Understanding the mechanics of snow ridging and its ability to replenish moisture reserves through infiltration into the soil is essential if the farmer is to make an informed decision about the merits of snow ridging. Research has shown that if there is indeed enough snow cover on a field to enable the farmer to develop an effective ridge, snow ridging can increase the amount of water available for next year's crop. However, there are a few points that a farmer should consider before he goes to the expense of ridging his fields.

Researchers have found that snow ridging on fallow fields generally is very difficult because of uneven snow cover. Ridging of snow has also proven uneconomical on fields that are fairly moist going into the winter. Moist fields do not generally have the ability to store any additional moisture that may be trapped by snow ridging.

Research has also shown at least 2 ridging operations are needed to establish effective ridges. Snow ridges only effectively trap snow on an area equal to six times their height. With this in mind, your first ridging operation should be undertaken shortly after there is sufficient snow cover. The second should be, if conditions permit, in late January or early February.

It is a good practice to avoid scouring the soil surface when ridging. This is possible only when the previous crop stubble has been left standing. Soil that is incorporated into the snow ridge causes the snow ridge to melt earlier thus destroying its usefulness at trapping snow. Relatively bare ground beside the ridge also allows the frost to penetrate deeper into the ground. This area then takes longer to thaw in the spring thereby reducing the soils ability to absorb the water from the trapped snow.

The cost of developing effective snow ridges in the field, per pass is about equal to a cultivation per pass.

After all the above discussion the question remains, does snow ridging pay? There seems to be little doubt that trapping snow on dry soils will definitely improve soil moisture levels for the next crop. Maybe the question should be asked, what is the most economical way to trap snow on our fields? Are farmers better off to till their stubble in the fall and then make snow ridges in the winter or should they leave their stubble stand over the winter to act as a snow trap. Mr. Farmer the decision is yours to make.

The Saskatchewan Soil Conservation Association (SSCA) invites you to participate in its'

1991 Soil Conservation Before and After Photo Contest

Prizes	**1st**	**—**	**$300**
	2nd	**—**	**$200**
	3rd	**—**	**$100**

The theme of the contest is the illustration of changes, positive or negative, which agricultural practices have made to Saskatchewan's landscape.

General Rules:

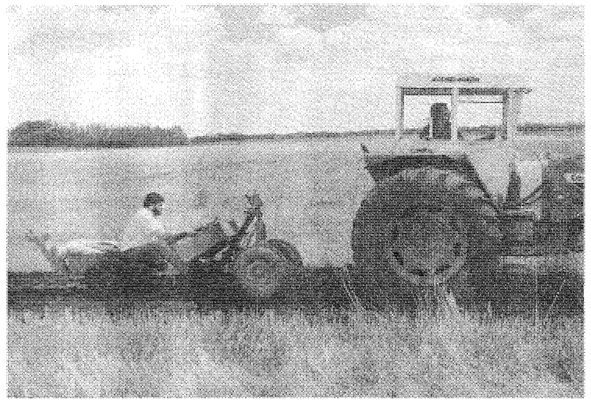
- Contest is open to the public except SSCA directors, employees and their immediate families
- All photos must reflect the contest theme and an appropriate date.
- A contest entry consists of a before and an after photo of the same land location. A legal land description must accompany the photos. Photos will be verified by the SSCA.
- Photos can be in slide or print format.
- Old photos (vintage) are welcome.
- All prints and slides submitted will become the property of SSCA and will not be returned, so you are reminded to keep your originals.
- Published photographs will be credited.
- **Deadline for submissions is October 1, 1991 and the winners will be announced November 1, 1991.**

Send your entries to:

Before and After Conservation Photo Contest
Saskatchewan Soil Conservation Association
132-3085 Albert Street
Regina, Saskatchewan
S4S 0B1

Ph: 787-0558 for more information

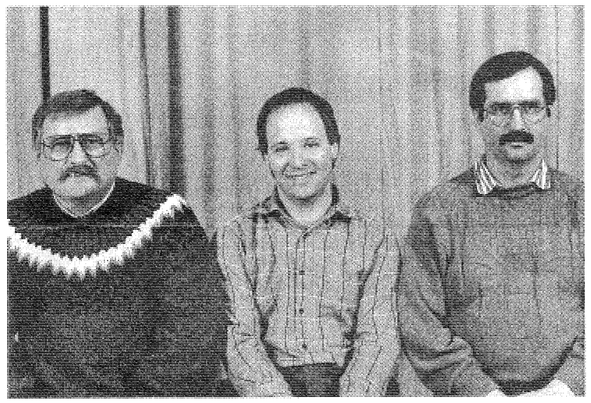
NOTE: Contestants are also reminded to begin collecting slides for the SSCA Annual Meeting Slide Competition to be held in February, 1992.



Howard Fox (Tree Guru) does more than talk about trees — he plants them

Saskatchewan farmers planted a record 3800 kilometres of field shelterbelts this spring. This is an increase of over 50 per cent in the number of kilometres planted in 1990. These tree rows will provide long term protection against soil erosion and help stabilize crop yields.

The PFRA Shelterbelt Centre in Indian Head is now accepting applications for shelterbelt seedlings for planting in the spring of 1992. Applications and planning assistance are available from your local ADD Board Soil Technician, Rural Service Centre, PFRA office or the Shelterbelt Centre.



SSCA Executive:
(l to r) Dave Bueckert, President-Elect; Gary Schweitzer, President; Ken Allport, Past President

Is the conservation of Saskatchewan's soil important to you and your family? If so, here is an opportunity to lead and direct the conservation efforts of the Saskatchewan Soil Conservation Association (SSCA).

There will be four vacancies on the SSCA Board of Directors for 1992-1993. Elections will be held for the President-Elect position as well as Directors for the South West, North West and East Central regions. Board members come from a diversity of farm/ranch backgrounds and bring varied experience to the Board. Board members must possess a keen interest, knowledge and commitment to the conservation of our province's land resources.

SSCA BOARD MEMBER RESPONSIBILITIES

The Saskatchewan Soil Conservation Association Inc. is a non-profit, charitable corporation directed by a Board of nine Directors elected by the Members of the Association. The Directors' mandate is to ensure that the SSCA is managed to encourage soil conservation within Saskatchewan, to meet the needs of the membership and to enhance the viability of the Association.

The Board of Directors establishes objectives and policies, approves major financial transactions, provides input to government representatives on conservation programs, provides SSCA representation on committees related to conservation, agriculture and the environment, and promote the need for conservation within Saskatchewan.

If you are interested in becoming a member of the SSCA Board of Directors or want additional information please contact any member of the Board or SSCA staff. Their names and phone numbers are listed on page 2 of the newsletter.

Nominations papers for the President-Elect or Director positions must be mailed by 30 September 1991 to Saskatchewan Soil Conservation Association, Room 132, 3085 Albert Street, Regina, Saskatchewan, S4S 0B1.

NAME

ADDRESS

POSTAL CODE TELEPHONE

QTR SEC TWP RGE W. of

Land location of home quarter (for regional designation purposes)

Full Membership — Agriculture Producers
1 year - $ 50.00 ____
3 years - $100.00 ____
Associate Membership — Non Producers
1 year - $ 50.00 ____
3 years - $100.00 ____
Supporting Membership — Institutions
1 year - $ 500.00 ____
3 years - $1,000.00 ____

Charitable Tax No: 0812370-59

Membership Enhancement Program:
If you are presently a member of the SSCA and wish to help the Association by recruiting new members, both you and the Association can benefit from your efforts. For every six (6) memberships sold in one year by you as a member, you will receive an additional 3 years membership as a bonus.
To qualify, print your name on the applications you sell and forward the applications plus membership fees to the SSCA. Applications may be sent individually or as a group. All memberships received by the SSCA between 01 April and 31 March of each year will be counted towards this Membership Enhancement Program.

Do you have ideas or comments on the conservation of our land resource? We would like to print them in future issues of the Prairie Steward. (Pertinent photographs would be appreciated) Please forward to:

The Editor
Prairie Steward
c/o SSCA
132 - 3085 Albert Street
Regina, Sask.
S4S 0B1

The Newsletter of the Saskatchewan Soil Conservation Association Inc.

SASKATCHEWAN SOIL CONSERVATION ASSOCIATION
In co-operation with the Agriculture Development Fund

Soil Conservation: A Practical Video Guide

SSCA is pleased to announce that Soil Conservation: A Practical Video Guide is now complete and ready for distribution. This video will show you how to: 1) Plant Barrier Strips 2) Plant Field Shelterbelts 3) Manage Crop Residue 4) Install Field Stripcropping and 5) Grass Small Gullies.

SSCA members can acquire a free copy of the video through the SSCA head office in Regina. A distribution plan is presently being developed with the SASKATCHEWAN WHEAT POOL to accommodate the general public who may want to view or buy a copy of the video. For more information, please call the SSCA office in Regina at 787-0558.

By: Marvin Fenrich
N.W. SSCA Director

Farming in the 90's will require many changes in all aspects of our diverse business. How well do we cope with these changes? Will we have the resources to finance the changes? Do we have the desire to accept these changes? There are many questions that we have to answer, but the latter seems to be our greatest challenge. Why is it that so many farmers are reluctant to change their attitude about the way they carry on their business? I have long pondered this question and would like to share my thoughts with you.

A trusted friend of mine once said that the only thing constant in farming is change. We are constantly being bombarded with new equipment, new grain varieties, new management tools, new farming techniques, new government programs and the list goes on. A farmer has many choices today which generally affects his or her operation in a variety of ways.

We are constantly being bombarded with new equipment, new grain varieties, new management tools, new farming techniques, new government programs and the list goes on.

When a farmer goes out on a limb to attempt a new practice, its associated cost will come with it. The cost can be financial, time, or the most dreaded of all, downright failure. Do we as farmers dare to put our pride on the line and accept that maybe failure the first time around isn't such a bad thing? The reality is that the fear of failure is much stronger than the desire to change.

Many new agronomic practices have been developed which have proven beneficial for our soils. Regrettably, the majority of farmers have not integrated them into their operations.

In the area that I farm in, there are very few, if any, "zero till farmers". You might find a few "continuous croppers". There are more with extended rotations which may include specialty crops like peas or lentils. However, the majority stick with a summerfallow-canola-wheat rotation. If you were to ask one of those majority farmers why he/she uses that shorter rotation, his/her answer may simply be, "well, its always worked for me". The reality of this statement is that the safest practice to follow is usually the one we are accustomed to.

Presently, I use an extended cropping rotation. I also have more of a perennial weed problem than some of my neighbours.

The change to new farming practices is never easy nor do they come without a cost. Most of you reading this article are probably true-blue conservationists and should be commended for your efforts. However, we should not think that we have all the right answers for our neighbours' questionable farming habits. The real challenge for us, as conservationists, is to help our neighbours with the "easy-to-adopt" changes. Then progress will come with the success that the farmer has experienced.

It has been very gratifying to see many farmers in my area adopt the practice of controlling winter annuals with 2,4-D. The summerfallow period is treated with a lot more thought and planning than in earlier years. There is also a change in attitude among many farmers with respect to our finite resource, the soil. This can only be positive for those of you that work long and hard at promoting soil conservation.

We need to be helpful and encourage our fellow farmers. We cannot lose patience when we don't see things change as fast as we would like. (Fenrich farms in the Wilkie area)

By: Garth Patterson
W.C. Soil Conservationist

They were over wondering what the hell a "blank" ing city person was doing snooping around.

My recent encounter with a couple burning a slough was a real eye opener. I stopped to take a few pictures and had no intention of confronting them or suggesting how they should run their farm. But, as soon as they saw me, they were over wondering what the hell a "blank" ing city person was doing snooping around.

For the next half hour I bore the brunt of their bitterness about the dry conditions (this was before our monsoon weather), low wheat prices, high input costs, ignorant highly paid city people, etc., etc.

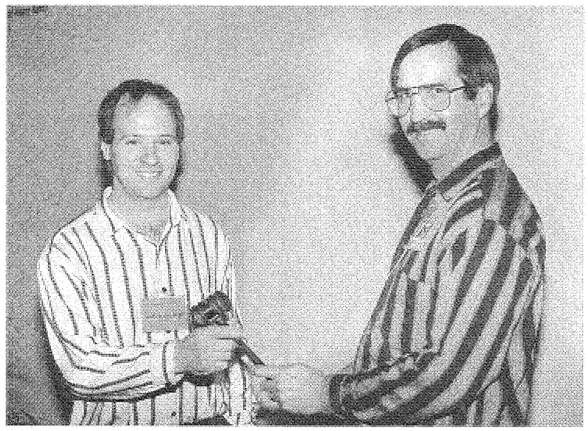
Yes, I do live in the city and I make no apologies for that. But, I like to think that I understand agriculture more than the average bloke. Maybe those two didn't think so at the time, but I really was on their side. Rural and urban folk need each other if this province is to survive.

I'm not bitter toward them. I feel sorry for them; sorry that a combination of economics and the policies of Canadian and foreign governments has forced them and many others to push their land beyond its sustainable limit.

Consider the following points:

1) Many of the major agricultural policies in Canada encourage extensive cultivation and "improvement" of marginal lands. They are actually disincentives for producers to preserve natural habitat. This places the responsibility for preservation of these lands on the producer, often contrary to his or her economic benefit. Why should a producer not break-up land just so some city person can come out on the weekend and shoot up the place?
2) Canadian consumers enjoy and expect low food prices. An international trade war has depressed the prices of agricultural exports. Producers are in a cost – price squeeze.
3) Some city people perceive farmers as complainers, who only work a few months each year anyways.
4) Land management practices in Saskatchewan are very loosely regulated. Producers can basically treat and manage their land how they want. This is quickly changing in Europe, the United States and even other parts of Canada. There are now millions of taxpayer's dollars going into GRIP and NISA.

continued on p. 4



Gary Schweitzer accepts the President's gavel from Past-President Ken Allport.

Greetings to SSCA members and to all Soil Conservationists. It appears 1991 is going to be another difficult year for Saskatchewan farmers. The challenge will be how to survive economically without jeopardizing the longterm health of the land. Farmers have proven to be remarkably resilient in the past, and with a bit of help from mother nature, I am confident that both the farmers and the land can survive 1991 intact.

Annual Meeting:

The first item of business is to report on the 1991 Annual Meeting held in Regina, March 7-8-9. Soil Conservation Canada (SCC), a national soil conservation organization based in Ottawa, and SSCA joined together this year to present a conference and trade show in conjunction with their respective annual meetings. I'm extremely pleased to say that the three days were considered very informative and successful. The workshops, presentations and trade show were attended by delegates who heard speakers deliberate on:

— Designing Your Rotations for Conservation
— Good Conservation Ideas That Work
— Soil Organic Matter Update
— Farm Planning for Conservation
— Wetland and Upland Habitat and Soil Conservation
— Holistic Resource Management
— State of the Nation Report on Soil Conservation.

Comments received from delegates regarding the presentations were that they found the producer presentations most beneficial and that future meetings should include a greater number of producer speakers. On behalf of the Board of Directors, I commend the SSCA staff for their professionalism in organizing and delivering such a successful meeting. I also wish to thank Soil Conservation Canada's staff and members for their cooperation and contribution to the conference.

Soil Conservation Tip Kit

A soil conservation Tip Kit, produced by the Canada-Saskatchewan Agreement on Soil Conservation, has been well received by producers. To date, more than 5500 Tip Kits have been mailed at the request of producers. The Tip Kit contains 12 monthly information sheets dealing with conservation procedures, considerations and practices. If you don't have your copy of the Tip Kit, please contact your regional soil conservationist or get in touch with the SSCA office in Regina. Tip kits are available through the SSCA, PFRA, or the Saskatchewan Department of Agriculture and Food.

Land For The Future Tabloid

SSCA is pleased to have participated in another Canada-Saskatchewan Agreement on Soil Conservation joint venture of distributing the Land For The Future Tabloid. Over 1.5 million copies were produced and distributed to every household in Saskatchewan, Alberta and Manitoba. Distribution took place during National Soil Conservation Week with the intention of educating the general public about soil conservation.

Mailout

In a recent mail out to producers interested in soil conservation, the SSCA sent a letter, a copy of our brochure and a list of our board of directors, and regional and central staff. If you know of anyone asking questions relating to soil conservation or the SSCA, please feel free to have them contact any of the directors or the staff.

Finally

I promised myself that the President's message would be brief and to the point, but I must admit that it's hard to keep it to one or two paragraphs. In our last newsletter, we requested submissions for the Prairie Steward from our members. To date we have not received a single letter, article or suggestion from our readership. Could it be that the SSCA is doing such a great a job that our readers have no concerns, questions or suggestions as to the direction the SSCA is going? If you would like to share your ideas, please feel free to express yourself through the next edition of the Prairie Steward. Till next time – good farming.

Gary Schweitzer
President, SSCA

Beach, Allan, Weyburn
Bell, Kelly, Brandon
Bennett, John, Biggar
Bettschen, David, Broadview
Brown, Elaine, Turtleford
Bueckert, Margaret, Tugaske
Bunnell, Jeff, Moose Jaw
Burnham, Trevor, Summerberry
Chariter, Guy, Regina
Cormin, Garet, North Battleford
Dauk, Germain, Naicam
de Moissac, Rene, Biggar
Dolter, Allan, Wolseley
Dyck, Sam, Warman
Dyck, Donald, Borden
Egert, Bill, Biggar
Edler, Ken, Simpson
Evans, Russ, Calgary
Farkas, Ray J., Macklin
Fowler, Brian, Saskatoon
Francis Bros., Battleford
Frick, Brenda, Saskatoon
Gerwing, Jim, Lake Lenore
Getz, Ken, Birch Hills
Gheyssen, Gary, Benson
Godenir, Rick, Aneroid
Goodnough, Dennis, Moose Jaw
Gossling, Malcolm, Lucky Lake
Halderman, Daniel, Frontier
Haudegand, Andre, St. Denis
Hayward, Les, Tisdale
Hilliard Clint, Saskatoon
Holik, Andy, Winnipeg
Holland, Kim, Avonlea
Hoppe, Ernest, Biggar
House, Harry, Moose Jaw
Johnson, Don, Kipling
K. Ridge Farms, Speers
Knelsen, Roy, McMahon
MacDonald, Glen, Elrose
MacIntyre, Alex (Sandy), Brock
Malach, Thomas, Candiac
Martens, Ken, Neville
Maruska, Johnny, Moose Jaw
McEwen, Ken, Central Butte
Medlang, Blaine, Sturgis
Middleton, R. E., Saskatoon
Millions, Debbie, Alida
Muderewich, Randy, Stenen
Nilson, John T., Regina
O'Grady, Grattan, Allan
Olson, Bill, Plenty
Paddock, Burns, Saskatoon
Patrick, Kelly, Kelvington
Paul, Verle E., Prince Albert
Pearson, Don, Eston
Phillipson, Tom, Moose Jaw
Pipp, George, North Battleford
Pord, Hector, Ponteix
Rathwell, Morris, Moose Jaw
Reid, Barry, Tisdale
Rein, Terry C., Indian Head
Riou, Robert, Tisdale
Roberts, Colin, Moose Jaw
Rygh, Lorne, Kipling
Salmon, Blaine, Moosomin
Sander, Tony, Hanley
Sarauer, James, Muenster
Schmidt, Earl, Drake
Schnedar, Emil, Biggar
Scholz, Murray, Churchbridge
Schultz, Garry, Regina
Shaw, Ken, Shaunavon
Simmons, Gord, Colonsay
Simpson, Evan, Theodore
Speir, Susan, Brock
Stein, Stacey, Simpson
Strasser, Jerome, E., Bruno
Thompson, David E., Kelliher
Totton, Garth, Coronach
Vickaryous, Richard, Watrous
Williamson, Denis, Indian Head
Zentner, Michael, Watson
Zielke, Al, Tisdale

SSCA Board of Directors (from l to r)
(front row) Dave Bueckert - Terry Pearse - Ken Allport - Brett Meinert (former Board Member)
(back row) Gary Schweitzer - Marvin Fenrich - Gerald Girodat - Ken Sapsford - Fred Phillips - Gerry Willerth

At the 1991 SSCA Annual Meeting held in Regina, SSCA 1990-91 president Ken Allport (Kyle) handed the president's gavel to in-coming president Gary Schweitzer (Eston). Joining Ken and Gary on the SSCA Executive is Dave Bueckert (Tugaske) as president elect. Other SSCA directors include Marv Fenrich (Wilkie) representing the North West — Gerald Girodat (Shaunavon), SW, Terry Pearse (Tisdale), NE, Fred Phillips (Yorkton), EC, Ken Sapsford (Perdue), WC, and Gerry Willerth (Indian Head), SE.

"The ability of these newly elected people leaves the Association in good hands," said out-going president Ken Allport.

"If I can carry the ball as well as Ken has over the last year, our Association will enjoy a produc tive and progressive year," replied Schweitzer.

Saskatchewan Soil Conservation Association Inc.
Gary Schweitzer, President
Eston, 962-4751
Dave Bueckert, President Elect,
Tugaske, 759-2523
Ken Allport, Past President, Kyle
375-2691
Marv Fenrich, NW Director, Wilkie
843-2083
Terry Pearse, NE Director, Tisdale,
873-4862
Ken Sapsford, WC Director, Perdue,
237-4402
Fred Phillips, EC Director, Yorkton,
782-5265
Gerald Girodat, SW Director,
Shaunavon, 297-2913
Gerry Willerth, SE Director, Indian
Head, 695-2086

Regional Soil Conservationists
Blair McClinton, North Battleford,
446-7650
Garry Meier, Tisdale, 873-4290
Garth Patterson, Saskatoon,
933-5287
Juanita Polegi, Yorkton, 786-1526
Pat Flaten, Swift Current, 778-8284
Bob Linnell, Weyburn, 848-2381

132-3085 Albert Street,
Regina, Saskatchewan S4S 0B1
(306) 787-0558
John J. Kiss, Executive Manager
Carolyn Fife, Office Manager
Guy Chartier, Communications
Specialist
Soil Conservation Specialists
Howard Fox, Shelterbelts
Nancy Fraser, Range and Pasture
Management
James Lokken, Conservation Economics

Haymaker's Day — Agriculture Canada at Swift Current
June 25, 1991
* contact Carl Lynn (306) 975-7014

Conservation for Profit (Workshop and Field Day) Lakeland College, Vermilion, Alberta
June 27, 1991
* call (403) 853-8444

District 15 Tillage Demo at Stalwart
June 27, 1991
* contact Dave Bueckert 759-2523

District 15 Tillage Demo at Kenaston
July 3, 1991
* contact Dave Bueckert 759-2523

West Central Regional Conservation Team Tour of Kerrobert and Biggar Areas
July 10, 1991
* contact Garth Patterson (306) 933-5287

Indian Head Crop Field Day — Agriculture Canada
July 11, 1991
* contact Carl Lynn (306) 975-7014

Saskatchewan Crop Field Day — Agriculture Canada
July 11 & 12, 1991
* contact Carl Lynn (306) 975-7014

Outlook Irrigation Centre Field Day
July 12, 1991
* contact Laurie Tollefson (306) 867-9951

Rosetown ADD District and Sask Wheat Pool General tour of Rosetown Area
July 16, 1991
* contact Ken Allport (306) 375-2691

District 1 Field Tour — Estevan Area
July 17 - 19, 1991
* contact Bob Linnell (306) 848-2381

District 37 Semora Grain Production Club — Raymore
July 18, 1991
* contact Bob Linnell (306) 848-2381

District 1 Field Tour — Estevan Area
July 17 - 19, 1991
* contact Bob Linnell (306) 848-2381

Eston Crop Club Tour
July 18, 1991
* contact Don Sutherland (306) 962-4362

Outlook ADD District Tour of Dryland and Irrigated Sites
July 22, 1991
* contact Bill Hurd (306) 867-8684

Scott Experimental Farm Field Day
July 24, 1991
* contact Carl Lynn (306) 975-7014

District 39 Tour
July 25 & 26, 1991
* contact Juanita Polegi (306) 786-1526

Rosetown ADD District and Beechy Crop Club Tour of Range Management and Soil Conservation Sites
July 25, 1991
* contact Ken Allport (306) 375-2691

District 15 Tillage Demo at Bethune
July 26, 1991
* contact Dave Bueckert 759-2523

District 19 Tour
July 26, 1991
* contact Juanita Polegi (306) 786-1526

District 29 (Rosthern) ADD Board Tour
July 30, 1991
* contact Donald Dyck (306) 977-4532

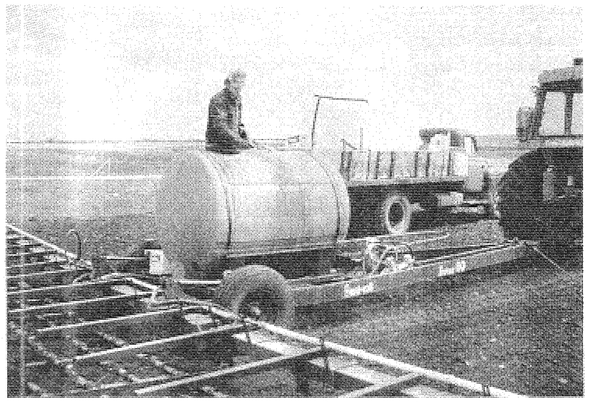
District 12 & 13 Tour
July 30, 1991
* contact Juanita Polegi (306) 786-1526

District 35 (Lloydminster) ADD Board Tour and Lashburn Ag. Canada Substation Field Day
July 31, 1991
* contact Roland Brassard (306) 825-2547

Rosetown ADD District Tour of Exotic Crops, Salinity, Fertilizer and Chemical Trials in Elrose area
July 31, 1991
* contact John Ippolito (306) 882-3447

Northwest RCT Tillage Field Day — Blaine Lake
August 7, 1991
* contact Blair McClinton (306) 446-7650

Northwest RCT Tillage Field Day — Edam
August 8, 1991
* contact Blair McClinton (306) 446-7650



Using clean water in your spraying operation is extremely important

By: Assoc. Prof. Rick Holm,
Dept. of Crop Science and Plant Ecology
University of Saskatchewan

The use of herbicides such as 2,4-D, Roundup, Rustler and Sweep as a means of reducing the amount of tillage on summerfallow fields can be an important part of a soil conservation program. But, you should be aware that the water you add to your sprayer tank may contain dissolved minerals and/or suspended solids that could reduce the effectiveness of these herbicides.

The importance of using clean water for spraying has been recognized for some time. Water that contains suspended silt or organic matter can plug sprayer filters and screens and will reduce the activity of herbicides that contain glyphosate (Roundup, Rustler, Laredo, Wrangler), paraquat (Gramoxone, Sweep) or diquat (Reglone).

More recently, researchers have discovered that certain minerals dissolved in water can reduce the effectiveness of some herbicides. The antagonistic effect of hard water (water containing calcium and magnesium) on the activity of glyphosate has been well documented. Recommendations for the use of low water volumes (5 rather than 10 gallons per acre) and the addition of ammonium sulphate (21-0-0-24 fertilizer) when applying low rates of the herbicide have been developed to deal with this problem. The activity of glyphosate is also reduced by water that contains iron.

Work carried out in North Dakota and at the University of Saskatchewan indicates that hard water and soft water containing high levels of sodium chloride (table salt) or bicarbonate (usually sodium bicarbonate) may reduce the activity of 2,4-D amine, especially when growing conditions are not favorable for good weed kill. The ester formulation of 2,4-D does not exhibit the same problem, however.

What can you do if you suspect that your source of spraying water may be causing you a problem? The work carried out to date is only preliminary and so specific guidelines cannot be given for specific water sources. However there are a few general precautions that can be followed:

1. If you haven't already done so, have your water tested for dissolved minerals. The test you require is the irrigation water test offered by the Saskatchewan Soil Testing Lab. It costs $37.00 which is very low in comparison to the size of most herbicide bills. As I said earlier, we still don't have enough informaton yet to give specific recommendations on water quality but knowing the mineral content of your water could help explain or avoid some herbicide performance problems.
2. If the water quality is suspect, try to find an alternate source of better quality water if possible. Any river water is generally of good quality but don't assume that dugout water will be satisfactory. Dugouts filled by surface run-off will be of generally good quality but dugouts that are cut into the water table may be full of highly mineralized water. Make sure you are making a change for the better if you make a change. Don't make assumptions.
3. If you suspect your water source may be causing a problem, use the minimum water volume / acre that is required to obtain good coverage, maintain crop safety and prevent excessive drift. Work in Saskatchewan has shown that Roundup is more effective when applied at 5 gallons / acre as compared to 10 gallons / acre, especially when low rates of herbicide are being applied.
4. Use additives as recommended on the herbicide labels.
5. Apply the recommended rate for the job at hand. If the water you use is reducing the activity of the herbicide somewhat, cutting the herbicide rate by even a slight amount could result in complete failure. This is especially true if weather conditions are not conducive to good weed kill or if the weeds are at an advanced stage of growth.
6. Aim for optimum timing to allow the product the best chance to get the job done.
7. Watch the weather and try to avoid spraying when conditions are not favorable. Spraying in the early morning or late in the evening usually results in better control than spraying in the heat of the day. If conditions are unfavorable (very hot, for example) and better conditions are forecast, post-pone spraying for a day or two.
8. Use 2,4-D ester rather than amine wherever possible as the ester formulation does not appear to be affected by dissolved minerals in the water.

The Agriculture Development Fund is providing us with financial support for more research into the effect of water quality on the performance of herbicides. Extensive testing will be carried out over the next three years to determine the extent of the problem and to find ways of overcoming it. If you have experienced reduced weed control with any herbicide, have not been able to uncover a satisfactory explanation for the problem and suspect that water quality might be the cause, I would like to hear from you. My phone number is 966-5006 and my mailing address is Dept. of Crop Science and Plant Ecology, University of Saskatchewan, Saskatoon, SK. S7N 0W0. I will follow up with you to obtain specific details on the nature of the problem and the source of the water that you use for spraying. We don't have all the answers but hopefully we will be able to help you determine the cause of the problem.

Participating Organizations:
1) Saskatchewan Rural Development — Extension (Co-Chairman)
2) PFRA — Soil Conservation Service (Co-Chairman)
3) Saskatchewan Soil Conservation Association
4) Saskatchewan Rural Development — Lands
5) Saskatchewan Parks and Renewable Resources— Wildlife Branch
6) Saskatchewan Institute of Pedology — Saskatchewan Soil Survey
7) Agriculture Development Fund
8) Ducks Unlimited Canada

South West Region
1) Jim Pratt (Soils & Crops Agrologist) Swift Current 778-8284
2) Paula Brand (Area Conservationist) Swift Current 773-7255
3) Patricia Flaten (Regional Soil Conservationist) Swift Current 778-8284
4) Greg Haase (Regional Manager) Swift Current 778-8292
5) Chris Dunn (Regional Biologist) Swift Current 778-8205
6) Marie Boehm (Soil Surveyor) Saskatoon 975-5638
7) Chris Ruschkowski (Regional Technology Transfer Coordinator) Moose Jaw 694-3616
8) Doug Fraser (District Agrologist) Regina 569-0424

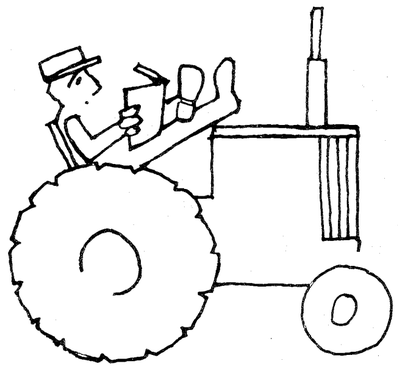
North West Region
1) Eric Johnson (Soils & Crops Agrologist North Battleford 446-7475
2) Garet Cormin (Area Conservationist) North Battleford 445-6217
3) Blair McClinton (Regional Soil Conservationist) North Battleford 446-7650
4) Al Foster (Land Agrologist) North Battleford 446-7472
5) Wally Kost (Regional Biologist) Saskatoon 993-7942
6) Clint Hilliard (Soil Surveyor) Saskatoon 975-5638
7) Bruce Baumann (Regional Technology Transfer Coordinator), Saskatoon 933-5876
8) Dave O'Bertos (District Agrologist) North Battleford 445-2575

North East Region
1) Roy Button (Soils & Crops Agrologist) Tisdale 873-2585
2) Jason Fradette (Area Conservationist) Melfort 752-4442
3) Garry Meier (Regional Soil Conservationist), Tisdale 873-4290
4) Brian Harris (Land Agrologist) Prince Albert 953-2784
5) Ed Kowal (Regional Biologist) Prince Albert 953-2695
6) Mike Bock (Soil Surveyor) Saskatoon 975-5636
7) Bruce Baumann (Regional Technology Transfer Coordinator) Saskatoon 933-5876
8) Phil Curry (District Argologist) Melfort 752-2791

East Central Region
1) Zane Lewchuk (Soils & Crops Agrologist) Yorkton 786-1508
2) Gary Bank (Area Conservationist) Watrous 946-3303
3) Juanita Polegi (Regional Soil Conservationist), Yorkton 786-1526
4) Brant Kirychuk (Land Agrologist), Canora 563-4100
5) Adam Schmidt (Regional Biologist) Melville 728-4494
6) Rick Stushnoff (Soil Surveyor) Saskatoon 975-5636
7) Ron Kehrig (Regional Technology Transfer Coordinator) Saskatoon 933-5094

West Central Region
1) Larry Gramiak (Soils & Crops Agrologist) Saskatoon 933-5285
2) Dennis Haak (Area Conservationist) Rosetown 882-4272
3) Garth Patterson (Regional Soil Conservationist) Saskatoon 933-5287
4) David Hryhor (Land Agrologist) Saskatoon 933-5098
5) Wally Kost (Regional Biologist) Saskatoon 933-7492
6) Allan Woloschuk (Soil Surveyor) Saskatoon 975-4307
7) Ron Kehrig (Regional Technology Transfer Coordinator) Saskatoon 933-5094
8) Greg Brewster (Provincial Habitat Biologist), Regina 569-0424

South East Region
1) Dave Shortt (Soils & Crops Agrologist) Weyburn 848-2382
2) Dean Smith (Area Conservationist) Weyburn 842-4624
3) Bob Linnell (Regional Soil Conservationist), Weyburn 848-2381
4) Larry Spearing (Land Agrologist) Moosomin 435-3357
5) Alvin Anderson (Soil Surveyor) Saskatoon 975-5640
6) Chris Ruschkowski (Regional Technology Transfer Coordinator), Moose Jaw 694-3616



By: James Lokken
SSCA Soil Conservationist

Indian Head farmer Gerry Willerth has reduced his farm fuel use significantly since adopting conservation tillage in the 1980's. He attributes the fuel savings to fewer and different field operations. These operations require less time and tractor power.

Over the period 1983-1986, Willerth increased the annually seeded acreage on his 800 acre grain farm from 50 per cent to 80 per cent. Except for some tillage to control Canada thistle, he replaced cultivation with spraying. He finds that fewer spraying operations than cultivations are needed. Each spraying operation, using a smaller tractor, takes less than one half the time of a cultivation. Direct seeding with a no till drill eliminates the need to harrow and pack.

Willerth has not calculated his exact fuel consumption figures. However, he estimates that in recent years he has used about one third less fuel for farming than when he was practicing conventional tillage. This reduces fuel purchases by several thousand litres each year. He relates an interesting anecdote to illustrate his experience:

"In 1985, the Indian Head area switched from fuel oil to natural gas for home heating. Sometime in 1986, I met my fuel dealer on the street in Indian Head. He was taking stock of the change in fuel use by his customers since the introduction of natural gas and asked me: 'are you going to another dealer for some of your fuel?'"

"The dealer noted that my fuel purchases had decreased more than my neighbours' and wanted to know if there was a problem with his service. In fact, I still was buying all of my fuel from that dealer. I simply didn't require as much because of fewer, more fuel efficient field operations."

Willerth concedes that there are other increased cash costs to conservation tillage as he practices it. The largest increase in cash expenditure is for the herbicides used to replace cultivation on fallow.

The savings on fuel alone do not offset the herbicide expense. In addition, it is difficult to place a dollar value on the time saved by replacing cultivation with spraying operations. However, Willerth firmly believes the benefits outweigh the costs. He regards the lower fuel costs as an indication of larger savings to his operation in labour, depreciation and investment costs. He observes that: " A welcome bonus is the time that is freed for summer fishing and family activities".

Willerth uses a 140 hp tractor which burns about 5 gallons of fuel per hour for the small amount of cultivation he does. He pulls his sprayer with a 50 hp tractor which uses 2 -2.5 gallons per hour. Spraying a field takes less than half the time of a cultivation.

On fallow, Willerth has replaced an average of three cultivations and two rodweedings with three spraying operations. Thistle patches are treated with a combination of tillage and herbicide.

Chemfallow operations usually consist of:

1. late fall or early spring – 2,4-D
2. late June – dicamba and glyphosate
3. early August – dicamba and glyphosate.
4. fall – treatment of thistle patches with glyphosate. Just before the August spraying of his fallow, Willerth cultivates his problem thistle patches and avoids spraying them. He then sprays them at the rosette stage.

Since moving to chemfallow, there have only been two years that Willerth has had to spray more often than the above schedule.

Willerth does most of his seeding directly into standing stubble with a no till drill. Pre-seeding weed control on stubble consists of fall or spring 2,4-D and pre-emergent wild oat control. Occasionally, Willerth has used a preseeding application of glyphosate. He usually tries to seed early and use crop competition for weed control. In-crop spraying costs differ very little between conventional and conservation tillage operations, according to Willerth.

Seeding with a no till drill requires more power and time than conventional seeding. However, since there is no need to harrow or pack, the costs of seeding are probably about equal for each system. A custom operator with a no till air hoe drill is hired, so the cost to Willerth is an up-front cash cost.

The following table compares some of Willerth's costs with typical conventional costs in the Indian Head area. Overall, the costs are comparable. The cost of each operation includes a charge for labour and machinery repair, depreciation and investment.

"The dealer noted that my fuel purchases had decreased more than my neighbours' and wanted to know if there was a problem with his service."

Comparison of Costs of Various Operations
For Conservation and Conventional Tillage

$/acre*

Conservation Tillage		Conventional Tillage	
Cropped Acres			
fall or spring 2,4-D**	3.50	(fall or spring tillage)***	4.00
(preseeding glyphosate)	8.25		
no-till seed	13.00	discer seed	6.50
		harrow-pack x 2	6.00
total	24.75	total	16.50
Fallow Acres			
fall or spring 2,4-D	3.50	heavy duty cultivation x 3	12.00
dicamba		rodweed x 2	6.50
and glyphosate x 2	15.50		
thistle patches		thistle patches	
- glyphosate****	.70	-glyphosate	1.50
- cultivation	.40		
total	20.10	total	20.00

* Costs are estimated using the 1991 Farm Machinery Custom and Rental Rate Guide, Saskatchewan Agriculture and Food.
** Each spraying operation includes spraying machine costs of $1.75/acre.
*** Operations in brackets are only carried out in some years.
**** Thistle spraying cost under Conservation Tillage is the difference between the glyphosate that was sprayed on 10% of the fallow acres for thistle control and the dicamba-glyphosate that was saved by not spraying the thistle patches in the early August chemfallow treatment.

Willerth emphasizes that each farmer must develop conservation methods and evaluate costs based on his or her individual situation. He points out that he is fortunate to have advantages such as good quality land and little wild millet, a common weed infestation on continuously cropped land in his area. On the other hand, the minimal soil disturbance in his farming system may be contributing to poor pre-emergent control of wild oats. Possible solutions include the use of rotary harrows or post-emergent controls.

The fundamental reason that Willerth practices conservation tillage is his desire to reduce soil erosion. As with any change in farming, Willerth has made tradeoffs between benefits and costs in moving to this system. It isn't always easy or possible to adopt a conservation practice if money must be spent in the present for future benefits that are difficult to express in dollars and cents.

The effort becomes easier when there are measurable decreases in expenses such as fuel, and when total costs fall into the same range as the costs of conventional farming. The improvements in soil structure, moisture infiltration and yields that Willerth observes are the tangible rewards. And, of course, there's that extra time for summer fishing.

A Soil Conservation Tip Kit outlining practical soil conservation methods aimed at keeping Saskatchewan's farm land fertile, productive and profitable has been developed by the Canada-Saskatchewan Agreement on Soil Conservation.

The Tip Kit is available free of charge to all Saskatchewan producers and contains 12 monthly tip sheets that describe methods of protecting, maintaining and improving their land. Topics include various ways to seed, tilling options, barrier stripping, residue management, shelterbelts, gully design and construction, weed control and a number of other "How To" suggestions relating to soil and wildlife habitat conservation.

To receive your free Soil Conservation Tip Kit, please write to Tip Kit, Canada-Saskatchewan Agreement on Soil Conservation, B33-3085 Albert Street, Regina, Saskatchewan, S4S 0B1.

JANUARY
- Tillage Planning
- Fertilizer Planning
- Emergency Control of Winter Wind Erosion

FEBRUARY
- Planning Crop Rotations
- Planning Field Shelterbelts
- Forage Planting

MARCH
- Seeding Techniques and Equipment
- Conservation Tillage
- Emergency Control of Wind Erosion

JULY
- Harvest Residue Management
- Moisture Management
- Establishing Annual Cover Crops
- Grazing Management

AUGUST
- Forage Establishment Planning
- Winter Crops - Preparing to Seed
- Controlling Perennial Weeds

SEPTEMBER
- Control of Winter Annual Weeds
- Fall Tillage Options
- Harvest Residue Management

APRIL
- Planting Field Shelterbelts
- Winter Annual Weed Control
- One-Pass Seeding

MAY
- Gully Repair
- Excess Residue Management
- Summerfallow Weed Control

JUNE
- Forage Establishment on Saline Areas
- Forage Harvesting
- Shelterbelt Maintenance

OCTOBER
- Don't Burn Stubble
- Evaluating Residue Cover
- Equipment Evaluation

NOVEMBER
- Develop a Soil Management Plan
- Develop a Soil Management Evaluation Table

DECEMBER
- The Economics of Soil Conservation

Canada-Saskatchewan Agreement on Soil Conservation

Q: How long have you been practising soil conservation?
A: I've practised soil conservation for probably 20 years. My land is fairly flat and there is very poor drainage on it which created a lot of problems. I have a couple of water runs which my father tore up 30 years ago. It didn't us take very long to realize that they had to be reseeded back to grass. That's the first thing we did relating to conservation . . . was seed our water runs back to grass and that has completely stopped our water erosion problem. It doesn't look like much. The waterways are flat except when the water starts to run then it can make a hole almost 3 to 4 feet deep.

I went out to swath one year and couldn't get threw the water damaged areas. The next spring, I was trying to fill in these areas and I buried the tractor . . . so that was it. That same year I got the grader out and levelled and seeded these areas to grass. We haven't had any problems with water erosion since.

I think that because the government is putting a lot of dollars into farming, they should put some strings on this funding and say 'This is what you must do in order to get these dollars.'

Q: What other soil conservation practices do you follow?
A: I'm heavily into trees. I firmly believe that trees stop the wind from blowing across my land. I planted some 5-1/2 miles at one time, which is a little too much. I'd never recommend anyone plant that much at one time . . . it's just too darn much work. Luckily I had children who could help me look after the trees 'cause they take an awful lot of care during the first two years. That stopped the wind erosion completely.

And then around 1982-1983, I got into the process of direct seeding. Just one pass and you can walk away from it.

Q: Do you recommend direct seeding?
A: I recommend direct seeding for everything. As far as I'm concerned, there's no type of soil, if given proper conditions, that shouldn't be directed seeded. Once you can get those root systems developed in your land . . . it never washes or blows away . . . and I mean never. It seems that if you have the root system in the ground, it doesn't wash those roots out of it. As far as I'm concerned, there's an awful lot of benefits that we haven't really even discovered yet when dealing with direct seeding. By direct seeding, I've noticed that my soil is getting a lot mellower in the last few years. It's much easier to handle . . . and it retains more moisture.

Q: Why isn't everyone in the province practising soil conservation?
A: Personally, I think it's lack of knowledge, ignorance and partially traditional. You know, people think they know everything about conservation but they really don't. It's pretty simple to sit down and rate conservation and approve it or say it's not going to work on my land. Basically, either tradition says that this is the way I've done it for the last hundred years . . . my dad did it that way . . . my grandfather did it that way . . . and I'm going to do it that way, too. Or else, you're in a situation which does not allow you to go and buy a direct seeding machine when you've got all the machinery sitting in your back yard. A Direct Seeding machine is worth $70,000 and there is no way you can go out and buy this machine if you don't know wether it's going to work on your land. This is why the experiments, the SOS (Save Our Soils) program is so good, because it provides the dollars for us to bring the machine onto the producers land and to show that it work's. Others don't practise conservation because of tradition. They can be a pretty stubborn bunch when they want to be. Farmers like to do things on their own time, when they want to do them, how they want to do them, and they resent anybody coming along and saying that this is what you should do.

Q: What could be done to convince producers to practice soil conservation?
A. Right now we have a good opportunity that just shouldn't be missed. Farming is not extremely good and I think that because the government is putting a lot of dollars into farming, they should put some strings on this funding and say 'This is what you must do in order to get these dollars.' Just to convince them to try it. Like I don't like being told what to do any better than the next person does. But if the govermnent is giving me dollars and they say 'this is what you must do in order to get that', then I can see nothing wrong with that.

Q: Are you saying that government should be a little more stringent and force producers to practice soil conservation?
A: Yes, I agree with that fully. I'm really amazed to think that the Canadian government is reluctant to put a program like that in place, when only 200 miles from my place, the Americans are doing that, lock, stock and barrel. They have a complete program down there which is really dominated by government rules. They say that "In order for you to sell grain at this price, you must do this" and all the American farmers do it . . . and they are now practising conservation quite willingly. They're not arguing about it, they're not complaining about it at all. On this side of the border, our governments won't even put anything like this into practice because I think they really believe that farmers are going to kick up a stink about it. I think farmers would be receptive to conservation. At least that's my idea.

Q: What has conservation meant to your farming operation?
A: I think it means less work for us. Direct seeding is a one-pass operation basically as far as work plans are concerned. You sometimes have to go out and spray it advance. It all depends if the weeds are growing. There is no sense spraying if the weeds are not growing, but if the weeds are there, you have to spray it which is cheaper and faster than cultivating it. So I think I save myself an awful lot of time and money by direct seeding . . . I really like it because you only have to do it one time and then you walk away. I think that the time saved is one of my biggest benefits. I really do have more time to attend meetings, go fishing and visit my grandchildren . . . and I really think that's important.

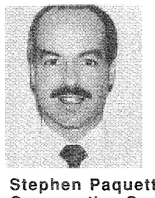
Q: Are we doing enough to teach our children about soil conservation?
A: Definitely not. I think a lot more needs be done in education and in the school system. I know that we have some things being taught in the schools about conservation, but I think a lot more must be taught and a lot more must be done with respect to planting trees. I'm a firm believer that one of the reasons that farmers don't like conservation is because they tore out trees for years and years and wanted to get rid of old bush. And I agree a tree in the wrong place is like a weed. However, if you get them in rows out in your field . . . a border between your fields . . . you won't have a problem. And I think what we should be doing is teaching people that a tree in the proper place can be a real benefit. It's not a hazard, it's not a detriment at all.

The general public . . . the person who lives in the city . . . has never really been out to see what a tractor or combine is. I think they have to become knowledgable as to what farming should be, how we can conserve, or how it would save them money in the long run. If I was Joe Public living in the city, I would demand that the dollars the govemment gives farmers be tied to something that was going to save me money in the long run, or at least assure that my food supplies would be there. I wouldn't just go ahead and throw it at the farming situation and hope that it does some good without any guarantee.

Q: Should something be put right into the curriculum dealing with conservation?
A: There's been a change over the last few years. My wife's a teacher and soil conservation has now become part of the school curriculum. There should be a lot more than what there presently is. I think that if we teach our kids the facts about soil conservation and demonstrate the reasons why we should conserve, that attitudes would change for the better. I think if we can show students what conservation means to the land and to the farmer, they would look at things differently. But like I say, there is not nearly enough being done to educate students and the general public at this time.

Q: Where are we going to be by the year 2000 regarding soil conservation?
A: Well, it depends on a lot of things. I'm a firm believer that governments should stay away from a lot of what they're doing in agriculture. Unfortunately, our government has to respond to what the governments in other areas of the world are doing . . .like Europe and the United States. Our government is very small potatoes when it comes to these other governments. So, we have to sort of do what the other governments are doing or else agriculture is going to die completely in Canada. I think a lot of it depends on what the governments are doing, but I can see people realizing that conservation is becoming more and more important all the time. I think it's going to keep it growing and growing . . . not as fast as I'd like to see it go . . . I can see it becoming more important and I can see farmers eventually changing . . . like the old farmers are going to be gone and the new farmers coming in are going to be changing their whole attitudes about conservation.

There's a whole new generation of people out there and they believe in doing things differently now. Unfortunately, the changes in farming don't take place as fast as they do in other technologies . . . in sound, in video, or whatever the case may be. Conservation is a little slower, but we will see changes eventually.



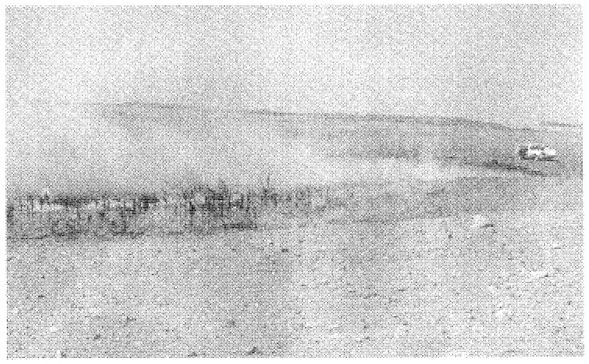
Stephen Paquette, former Soil Conservation Specialist with the SSCA has left the province for greener pastures. Steve's resignation was effective April 16th. Steve moved to Nanaimo, B.C., where he was going to enjoy a holiday before looking for work.

Based on the overwhelming success of the one day **Holistic Resource Management (HRM) Overview** with Allan Savory at the Saskatchewan Soil Conservation Association conference in Regina, the SSCA is pursuing the idea of hosting HRM courses in Saskatchewan.

If you are interested in participating in an HRM course, call the SSCA office in Regina (787-0558). If there is sufficient interest among Saskatchewan farm and ranch families to attend, we will inform you of the dates and locations for the courses.

Course costs will be kept to a minimum. The exact costs for the courses will be determined by the number of participants and the SSCA's ability to secure co-sponsors.

Stuart Dougan of Davidson was the winner of the draw for the soil auger at the SSCA conference. Stuart is SOS Committee Chairman for District #15. The draw was made from the conference evaluation form submissions.



Slough burning contradicts conservation.

Continued from p. 1

It may not be long before the Canadian public attaches strings to this money.

The big question is "What Should Be Done?" Producers are independent business persons with one thing in common; Economics is the bottom line! Government policies and programs must send the right signals. Tax credits to preserve wildlife habitat and marginal land may be one answer. We certainly need to develop a better mutual understanding of urban and rural lifestyles.

What else can we do? Should the SSCA become more vocal? Let's hear from you, the SSCA membership. Contact your regional director and tell him what you think.

Realities of wind erosion

By: John Kiss
Executive Manager, SSCA

On November 28th, 1990, the FOOD, AGRICULTURE, CONSERVATION AND TRADE ACT was signed into law in the United States (1990 FARM BILL). For those of you keeping track of conservation programs south of the 49th, the 1990 FARM BILL is an extension of the 1985 FARM BILL.

Either you make a farm plan and conserve your soil (environment) or you lose out.

To U.S. farmers, the 1985 farm bill legislated CONSERVATION COMPLIANCE. Either you make a farm plan and conserve your soil (environment) or you lose out on U.S. farm subsidies (benefits). In the 2nd edition of the Prairie Steward (1990), "Views on Land Stewardship" outlined the workings of the 1985 FARM BILL.

The key changes in the 1990 FARM BILL include:

* Graduated penalties for unintentional violation of CONSERVATION COMPLIANCE. Producers will face a reduction in benefits of $500 to $5,000 depending on the severity of the violation.
* Loss of program benefits has been extended to include AGRICULTURAL CONSERVATION PROGRAM, GREAT PLAINS CONSERVATION PROGRAM, ENERGY CONSERVATION PROGRAM, PL-566 WATERSHED PROGRAM AND DISASTER ASSISTANCE PROGRAMS.
* Extension of CONSERVATION COMPLIANCE to highly erodible lands under CRP. Annual payments not to exceed 10 years. Maximum is the lesser of either $250,000 U.S. or the value of the land without an easement.
* The trigger for violating "SWAMPBUSTER" is now the act of draining, dredging, filling, leveling or otherwise altering wetlands to produce an agricultural commodity. Producers will face a reduction in benefits of $750 to $10,000, depending on the severity of the violation.
* Addition of an INTEGRATED FARM MANAGEMENT PROGRAM OPTION to assist producers interested in integrated farm (environmental) planning and growing alternate crops.
* Expansion of the CONSERVATION RESERVE PROGRAM (CRP) to enroll 1 million acres per year for 1994 and 1995. Existing CRP contracts can be converted into hardwood trees, windbreaks or shelterbelts and extended to 15 years.
* Creation of a WETLAND RESERVE PROGRAM (WRP) to pay producers to conserve 1 million acres of wetlands.
* Violators of "SODBUSTER" will be ineligible for the expanded list of USDA program benefits (subsidies).
* Creation of a "SUPER-SODBUSTER" which prohibits producers with new CRP contracts from bringing newly purchased highly erodible land into production without losing eligibility for USDA program benefits.
* Creation of the AGRICULTURAL WATER QUALITY PROTECTION PROGRAM to enroll 10 million acres in 3 to 5 year agreements to implement water quality plans. Incentive payments of up to $3,500 per year with a cost share set at $1,500 per contract.

So there you have it! Strengthened and additional U.S. legislation to both support producers and the environment. The U.S. will not be returning to voluntary conservation demonstration programs.

U.S. producers will not only have to produce food, but will also have to be strict environmental managers or society will refuse to support them.

If you have strong feelings about conservation or environmental programs, I would like to hear them. Phone, send me a letter or fax your thoughts top 787-0551.

By: Nodrog Thgink
Farmer and Soil Conservation Critic

this is a free country and both sides of the issue need to be heard.

While Gordon Knight, Soil Conservationist is on the road encouraging farmers to seed forage, I feel that it is my duty to explain why one shouldn't. Afterall, this is a free country and both sides of the issue need to be heard.

Thank goodness we haven't been subjected to anything like the United States Farm Bill to date. The U.S. policy allows the Government the right to dictate what is done with erodible land – some people were forced to seed forage. Conservation Compliance . . . sounds like Fascism to me! This is a democracy! The less government, the better!

It doesn't make sense why anyone would take land out of production to seed forage. In this province, grain is definitely the way to go. I'm a fourth-generation grain farmer. Cattle are presently on the farm but they are going to market this year. Why would anyone raise cattle when wheat prices are so good?

Conservationists say that establishing forage stands reduces erosion. I don't mind some erosion as it reduces the organic matter content and the amount of top soil. I still have another inch or two to fall back on. Wind erosion also removes weed seeds from the soil surface and, in combination with five or six tillage operations, reduces trash cover and makes seeding easier. Sowing forage in saline areas is more of a bother than what it is worth. Why let forage deplete available moisture? Aren't we in dryland farming country? Salt patches break the monotony of 'black' summerfallow.

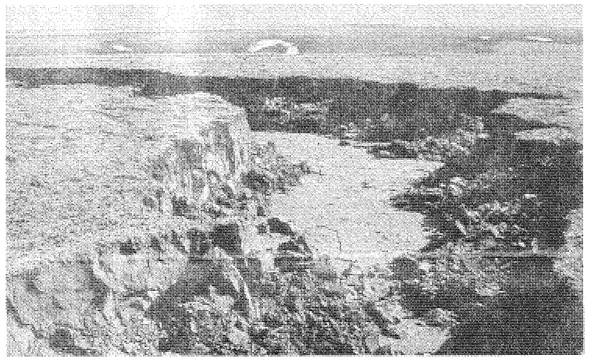
GRIP will pay me more on my Crop Insurance Class M, O, and P land than I will receive from establishing forage. Even with assistance from either the SOS Program and the Permanent Cover Program II (PCPII), the return from the safety net programs and past crop insurance payments will be greater. A few of my neighbours agree.

If forage encourages wildlife habitat, I don't want any part of it. Wildlife, especially waterfowl, upland gamebirds, and deer are a nuisance and reduce profits. Sure is a shame that I have to travel north each fall to get my game.

Diversification may be the 'buzz' word in Saskatchewan, but it will be a pain on my farm. I grow grain. I don't need a forage cash crop. Anyways, I've got adequate grain storage for two years.

I don't need forage crops. My cattle get fat enough feeding on stubble and weeds. With browsing, they receive a well-balanced diet and I get the trees trimmed. This saves time for more important things like draining sloughs and summerfallowing. Sure seems funny, but the trees don't stop the wind like they used to.

I don't mind picking rocks on my stony land. This activity gives me two weeks of exercise annually and keeps the kids at home on weekends and after school.



Water erosion cuts crop production

By: Ken Sapsford
W.C. SSCA Director

"Owing to heavy winds and shortage of moisture during the past four years, much drifting and blowing of soil has been experienced. The system followed in small grain farming tends to deplete the humus or fibre content until there is nothing to hold the soil particles together. Hon. Duncan Marshall of Alberta has warned the farmers that continuing the summer fallow practice will lead to ruin of the soil and that they must adopt a diversified system of farming – grow more clover, grass, cultivated crops, and provide for returning more humus or fibre to the soil to prevent blowing and add plant food."

The previous quote was written by J. G. Haney of the Agriculture Extension Department, International Harvester Company, and was printed in the Biggar Independent March 30, 1922.

why do we need a national week proclaimed for soil conservation when we knew 69 years ago that "summerfallow practices, will lead to the ruin of the soil?

National Soil Conservation Week was April 8-14, 1991. But why do we need a national week proclaimed for soil conservation when we knew 69 years ago that "summerfallow practices, will lead to the ruin of the soil"?

During the dry years farmers looked for ways to conserve soil, but when rainfall was ample and growing conditions were favourable a lot of marginal land was cultivated for annual crop production. Summerfallow practices became more concerned with "beautiful black" fields instead of residue management.

Prairie soils contain only 40 to 50 per cent of their original amount of soil organic matter, or humus as referred to by Hon. Duncan Marshall. It is estimated that it is costing the prairie farmers $70 million in nitrogen fertilizer alone to compensate for the loss of organic matter. This is only replacing the nitrogen lost, and not the other soil building properties of the organic matter.

There are also 5 million acres of land in the prairies affected by salinity and this is spreading by as much as 10 per cent per year in some areas.

Erosion has reduced the natural productivity of farmland in the region by 10 to 15 per cent. Each year, soil loss reduces the value of Prairie crop production by an additional $6 million.

Yes, there is a need for National Soil Conservation Awareness. Erosion can be brought under control with farming practices that have been known for decades, such as the use of conservation fallow, direct seeding, forage establishment, green manuring, fertilizing eroded knolls and responsible management of our valuable soil resource. The time for conservation is now, and should continue through wet years as well as dry.

By: Garry Meier
N.E. Soil Conservationist

Snow cover was close to average over most of the Northeast region. However, very dry soils, more standing stubble than normal, and a slow melt all contributed to a below normal run off situation. A lot of farm ponds and reservoirs did not fill this spring.

The spring snow melt also signals the end of the winter extension season. Interest was very high in direct/zero till seeding this winter. This was due in part to a lot of standing stubble in the northeast and also to the many direct seeding success stories that producers heard about, or witnessed firsthand in 1990. Farmers tend to get excited about 10 to 20 per cent yield increases in dryer years, just by doing a better job of moisture conservation. The side benefit to society is that producers who are direct seeding for economic reasons are also contributing to soil conservation.

I would estimate that close to ten per cent of the acres seeded in the northeast would have been direct seeded with a variety of seeding implements in 1991. I think that I would be safe in saying that results will be variable, as is the case when so many farmers try anything new on their farms.

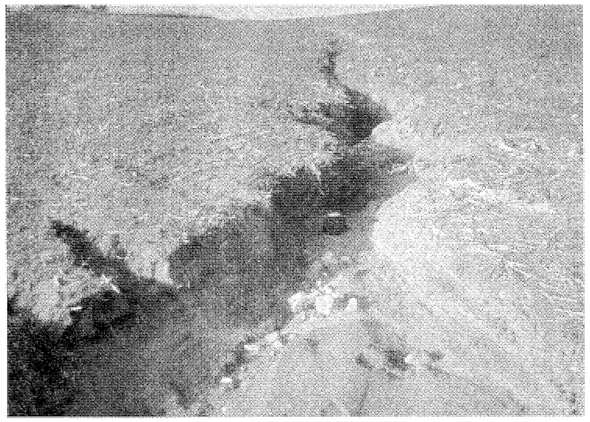
Surface moisture across the northeast is very good. Generally, as you move from the southwest corner of the region to the northeast, spring rain fall amounts taper off. Subsoils continue to be dry over much of the region. Moisture probes taken north and east of Tisdale in mid-May revealed only about 10 inches of moist soil on the knolls in clay soil.

This is approximately the same as in the spring of 1988.

Interest in tree planting is up in every district this year. The northeast planted 197 miles of trees under the SOS Program in 1990. It is expected that close to double that amount will be planted in 1991.

The northeast SOS committees will be planning tours and other extension activities this summer. I encourage SSCA members to participate in these tours wherever possible. With your encouragement, conservation farming will become the norm in the northeast. The land resource that we now manage will be passed on to the next generation in as good, or better condition than when we took over from our forefathers.

SSCA members are reminded that the Saskatchewan Soil Conservation Association Annual Meeting will be held February 10-11, 1992 in Prince Albert. Make your plans now to attend for what promises to be the most informative conference held to date. Information relating to the conference will be sent out to members as the agenda is formalised.



Waterways can be controlled if maintained

By: Garry Meier
N.E. Soil Conservationist

The grassed waterway is quite often the most neglected piece of ground on the farm. This is unfortunate because grassed waterways, which are established to control water erosion, are effective only if they are properly cared for.

The most important time of the year for the grassed waterway is during spring breakup. Snow, piled in the waterway, can act as a dam forcing the melted water to leave the runway and cause erosion in adjacent fields. To ensure that run-off water stays within the waterway, it is a good idea to create a path, within the snow, for the water to follow. This can easily be done with a tractor and blade or plow just prior to spring breakup.

There are many things that a producer can do to ensure the grassed waterway will provide years of effective erosion control.

After the spring run-off is complete inspect your waterways early. Repair any damage by filling in holes and if necessary reseed these areas.

The most effective and durable grassed waterway is a healthy one that is growing vigorously. Your waterway should be fertilized annually with an appropriate blend of fertilizers to promote good grass growth.

The grass should be mowed during the growing season to promote good sod development. Mowing your runway just before freeze-up will help reduce the amount of snow accumulation in the runway which could present some problems during spring run-off.

It is also a good idea to control any undesirable perennial weeds such as Canada Thistle in your runway. They compete vigorously with your sod-producing grass and provide a source of weed contamination for surrounding fields.

Finally, avoid using your runway as a parking area for rocks, stumps and unused machinery. These items are unsightly and make it unnecessarily difficult to maintain and care for your grassed waterway.

These are just a few tips that will help your grassed waterway and provide you with many years of erosion control.

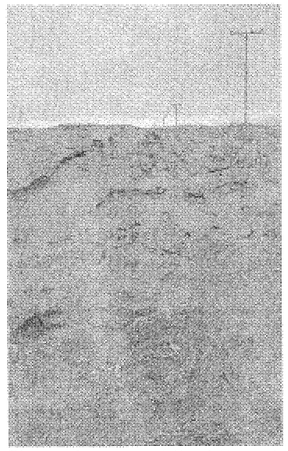


Photo taken west of Swift Current, April, 1991

By: Bob Linnell,
S.E. Soil Conservationist

Are Prairie producers really concerned about the health of the land resource? Or are they merely mining it, as some urban dwellers would have us believe? In all honesty, there are probably some producers in each category. However, most producers are genuinely concerned about conservation. They are equally concerned that the economics of conservation farming do not always seem favourable.

what can we do to conserve soil with today's technology and our present economic situation?

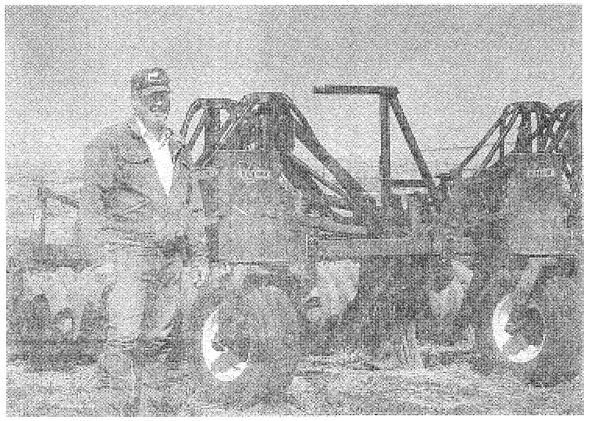
This issue of the Prairie Steward includes some articles that link current farming costs and returns with the future of our soil. Producers must ask themselves "what can we do to conserve soil with today's technology and our present economic situation?"

Effective management of moisture is one of the best tools we have to improve both the short and long term prospects for our farms. Good moisture management increases the probability of growing better and different crops more often. As such, it potentially increases economic stability. At the same time, it promotes the conservation of soil. Longer crop rotations are possible and larger amounts of crop residues are produced which protect fallow land.

Using herbicides to replace conventional fallow, leaving stubble standing to catch as much snow as possible and seeding directly into that stubble are three practices which maximize the moisture available for crops. Many producers have found they can extend their cropping rotations by using one or more of these practices.

One such farmer is Emile Carles of E-C Stock Farms near Radville. This past year, Emile and his brother Paul purchased a new Seed-O-Vator manufactured by New Noble Industries of Alberta. They found they could do an excellent job of seeding directly into standing stubble with the new machine. However, they know they have to watch for and respond to changes in the weed spectrum to achieve the best results.

Moisture management is key to their cropping success and their soil conservation efforts. Yes, conservation and moisture management are truly compatible.



Emile Carles (Radville) shows off his new Seed-O-Vator

Piapot school children and 'Snoop'

By: Pat Flaten
S.W. Soil Conservationist

Soil Conservation is being introduced in the schools. Not only soil conservation minded teachers, but farmers, school boards and soil conservation staff are getting involved.

Presentations are taking many forms — experiments, field trips, lectures, slide shows posters and essay contests, to name a few.

A couple of unique projects are worth special mention. In the Southwest, we have recently seen the arrival of our friend, SNOOP, and in one community, students are planting trees in their own backyard.

SNOOP, as he is called, was developed by WEIGL Educational Publishers Ltd. He is a fictional, rodent-like character used in the educational series as a companion for primary students to "snoop" into nature. One part of the series, focusing on soil, is distributed by PFRA.

When Allen Holtemeyer, Maple Creek District SOS technician, was making classroom presentations this winter, he became SNOOP.

Not without some difficulty, he had a SNOOP-suit created for himself. It seems to have gone over very well in that area.

At the other end of the region, south of Assiniboia, members of a School Board and A.D.D. Board put their heads together and saw what? Trees. Grade seven students at Rockglen were given the opportunity to learn about soil conservation in the classroom. Then, the practical application — they took elm and spade in hand, planting trees around the perimeter of the newly landscaped school yard. They will also learn to maintain those trees and perhaps plant a few more in the coming year.

A variety of projects such as these across the province can only help to install a positive land ethic in the consumers, producers and policy-makers of tomorrow.

Summer aplications of trifluralin leave the most crop residue

By: Blair McClinton
N.W. Soil Conservationist

Applying trifluralin during the summerfallow year can cause special problems for farmers trying to maintain crop residues. If producers keep a few things in mind, they can apply trifluralin without burying too much residue.

Fall applications of trifluralin in a chemfallow usually bury so much residue that they defeat the purpose of chemfallow. Crop residues left standing after herbicide applications will be weathered. These residues will break down easily when tilled in the fall.

To minimize the effect on residue of a fall application of trifluralin, farmers should incorporate it only once in the fall. The second incorporation can be delayed until spring.

Summer applications of trifluralin leave the most crop residue. Early applications of trifluralin will provide some weed control in fallow, reducing the number of tillage operations. Trifluralin can be applied anytime between June 1 and September 1.

Incorporation of trifluralin with disks should be avoided. Incorporation with field cultivators will leave more residue on the surface for erosion control.

By: Juanita Polegi
E.C. Soil Conservationist

Direct seeding seems to be the new buzz words in the East Central Region. Six of the eight district ADD Boards have made a direct seeding system available to their producers. In most districts, more producers have signed up for direct seeding projects than time will allow. Organizers generally feel that successes in these projects will do much to further the conservation cause in this Region. Districts involved in direct seeding systems include:

- **District #13** with a John Deere 752 direct seeding drill;
- **District #18** has a Flexicoil air drill with knife openers and packing wheels;
- **District #19** is using a Flexicoil 5000 air hoe drill;
- **District #39** has an Easy On air seeder with side banding double shooting boots;
- **District #42** has a Conserva Pak, and
- **District #43** is using a Morris Amazon 375 No till Hoe Drill

Some of the districts are setting up demonstrations using their implement beside plots seeded with an implement from a neighbouring district. Such demonstrations are bound to be of interest to the area's producers. The trees for field shelterbelts arrived in early May. Over 209 miles of trees were planted in this Region. A number of the districts hired contractors to plant the trees and these arrangements were generally welcomed by the producers. In mid May, Why Not Productions, a television production crew from Toronto, spent a week in this region. Gary Bank, East Central PFRA Area Conservationist, spent most of that time with the crew, escorting it on visits to local farmers. One of the farmers visited by the crew was our own Board member Fred Phillips. At the Phillips' farm, the crew filmed Fred seeding with his Haybuster and planting his field shelterbelts. The following day, the crew followed grade 7, 8 & 9 students from Bredenbury School on a Soil Conservation Tour that I organized. Dave Lukash (District S.O.S. technician) Howard Fox (SSCA Shelterbelt Specialist) were also present, serving as Resource Personnel. The crew assured us it has ample footage to work with in developing a program on issues of environment and economy facing Canadians today.

Some of the districts have already started to make plans for their summer tours. Producers should watch for notices of dates, times and location.

By: Blair McClinton
N.W. Soil Conservationist

The SSCA northwest regional meeting on February 7 in North Battleford was very successful. Thirty farmers from around the region came out to an afternoon meeting to listen to three innovative farmers and participate in a group discussion on farm policy. Ken Allport gave a presentation on the SSCA.

Minimum Tillage

Marvin Fenrich, northwest regional director, gave a presentation on the minimum tillage system used on his family farm near Wilkie.

The Fenrichs crop 80 per cent of their land. Their rotation includes a variety of crops such as wheat, barley, canola, peas and lentils.

Canola is grown on the summerfallow land. This presents a problem of how to apply trifluralin without burying all the crop residue. The Fenrichs use chemicals to control weeds until the end of June. Then they apply granular trifluralin with one incorporation around the first of July. The remaining weed control is done with a heavy duty cultivator with a trailed rod. This usually leaves more than the 30 per cent ground cover needed to prevent erosion.

Marvin also presented some of the economics of the Fenrich's system. His numbers show that the net returns of minimum till farming are higher than with conventional systems.

Green Manure

Rod Sjoberg, a producer from Speers, gave a presentation on his experience with green manure crops. The Sjobergs started to use green manure crops in 1980. Their reasons for trying this were to improve soil organic matter, improve infiltration and reduce erosion.

Rod believes that their organic matter is improving. He claims that their soil has better tilth and has fewer problems with crusting. By maintaining good residue levels after the plowdown, they have been able to significantly reduce the erosion from their fields.

The Sjobergs have used sweetclover, Indian Head lentils and oats as green manure crops. They prefer sweetclover over the other crops. Sweetclover is deeper rooted and has more top growth than either Indian Head lentils or cereals. The Sjoberg's are also experimenting with long term alfalfa hay rotations. They plowed down an alfalfa field for the first time last year. They are hoping that this rotation will benefit their soil as much as the sweetclover green manure.

Rotational Grazing

Lloyd How, a producer from Cutknife, gave a presentation on his rotational grazing system. The Hows developed their grazing system in 1985. They participated with the "New Pasture and Grazing Technologies Project".

Their pasture was divided into 12 paddocks using electric fence. They designed the paddocks to contain only one vegetation type. They have kept the bush separate from the grassland and the hilltops separate from the lowlands.

They installed a solar pumping system to pump water from a dugout to the watering area. This keeps the animals away from the dugout helping to improve their water quality.

The Hows believe that they are able to get better utilization of their pasture. They also believe that this system helped them through the drought of 1988.

Policy Discussion

James Lokken, conservation economist, gave a short presentation on how government policies can affect conservation. After his presentation, there were small group discussions on various policies. The conclusions of these groups were sent to SSCA's policy committee.

Bredenbury students measure crop residue while Why Not Productions of Toronto shoot footage
(Photo courtesy Four-Town Journal, Langenburg, Sask)

By: Juanita Polegi
EC Regional Soil Conservationist

Picture this. Regina's Queensbury Downs. Noon, March 8, 1991. (Producers, professionals and exhibitors intermingling at the Saskatchewan Soil Conservation Association's Annual Meeting and Trade Fair. Suddenly, the doors are flung open and over 155 grades 5 & 6 students burst onto the scene! The kids had arrived!

The arrival of the students, from 4 Regina schools including Mabel Brown, Haultain, Sacred Heart and Deshaye. signalled the beginning of the 'Annual Meetings' Youth Awareness Program. The purpose of the program was to educate children raised in the city on the importance of soil and soil conservation. This objective was accomplished by having them visit a series of "stations".

At the first station, the students had the opportunity to view a couple of airseeding systems. Incorporating some general science into the presentation, the students were asked to name 3 types of simple machines such as the wedge, lever and pulley. They were then shown how each of these machines is used in making an airseeder. The students learned that an airseeder is a good soil conservation implement since it minimizes soil disturbance.

At the second station, the students did some "concept mapping". Using a doughnut as an example, the students gave some thought to, or "mapped", the origins of a doughnut and its components. Students soon realized that without soil, there wouldn't be any doughnuts – or for that matter, a lot of other good things to eat!

Station 3 was the site of wind and water erosion experiments.Students were shown how quickly and badly the topsoil erodes when left unprotected. The students were surprised that little erosion occurs when the soil is protected by stubble and field shelterbelts.

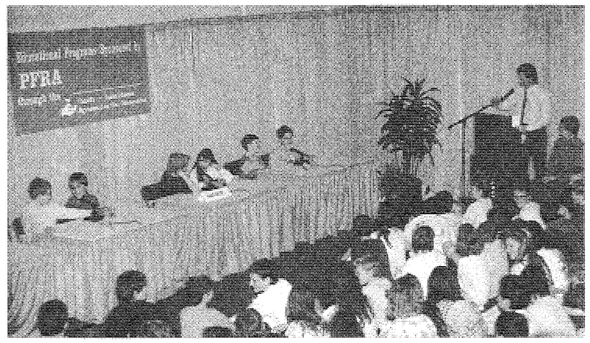
Wildlife was the focus at Station 4. Here the students learned that many sound soil conservation practices benefit not only the soil but waterfowl and animals as well.

The fifth station brought all 4 schools together for a "Reach For the Top"-style game show. Each school selected 2 representatives to participate in the show. The remaining students served as noisy and enthusiastic cheering squads. The participants in the show were asked questions about what they had learned at the 4 stations earlier. The team to hit its buzzer first had the first opportunity to answer the question. If the answer was wrong, the cheering squads groaned with disappointment. But when the answer was correct, they applauded loudly and cheered heartily!

After all the questions had been posed and the judges had done their final tally, the Mabel Brown students emerged victorious. While their fellow students cheered, the Mabel Brown game show participants accepted, on behalf of their school, soil magnifiers from the SSCA, a book from the Regina Natural History Society and "Make Way for Wildlife" 4H Project Manuals and Leaders' Guides from Saskatchewan 4H. The 3 other schools also received books from the Natural History Society and manuals from 4H.

The Regina Youth Awareness Program proved to be an eventful, fun-filled learning experience for all involved. The interest and enthusiasm displayed by the students was certainly appreciated by the members and staff of the SSCA.

Students explore soil conservation "station" at annual meeting



Conservation quiz game show had students cheering

By: Blair McClinton
N.W. Soil Conservationist

In the spring of 1990, many areas in the northwest had severe wind erosion. What was most surprising was that the fields eroding the worst were loam soils which are the least susceptible to erosion.

Why are these loam soils eroding so easily? There are two main reasons for this problem: loss of residue and the breakdown of soil structure (lumps). Residue levels and soil structure are both very important for controlling erosion. The effects of tillage on crop residue levels are well known. However, tillage can also cause some dramatic changes to soil structure.

Tillage breaks up surface crusts into lumps of various sizes. Medium textured loam soils tend to form into a high percentage of stable lumps. Clay and sandy soils tend to form fewer lumps and they are less stable. The faster the soil is tilled, the more lumps that are broken into smaller pieces.

When soil is intensively tilled, it can be left powdery. Soil in this condition is very erodible. For example, a loam soil in the North Battleford area with good structure would only need 500 lb/acre of residue to control erosion. If the soil was pulverized with a large percentage of loose fine soil, it might need 750 lb/acre of residue to control erosion. What makes matters worse is that soils with poor structure usually have less residue as well.

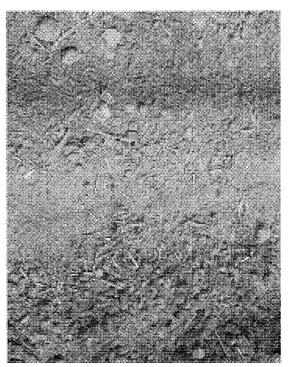
Different tillage implements have different effects on soil structure. Some implements will improve surface structure while others help break it down.

Rod weeders tend to improve the surface structure by bringing larger lumps to the surface and burying smaller soil particles. Cultivators with trailed rods also leave the larger lumps on the surface.

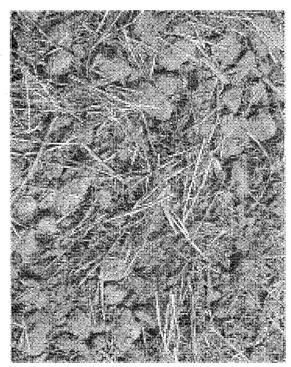
Harrow-packer drawbars are the worst implements for breaking up surface structure. The harrows agitate the soil while the packers crush the lumps. Mounted harrows on cultivators also help to break down surface structure.

Maintaining stable soil aggregates is an important part of residue management. This is particularly true for those areas that have low residue levels. Poor soil aggregation along with low residue levels can have devastating effects.

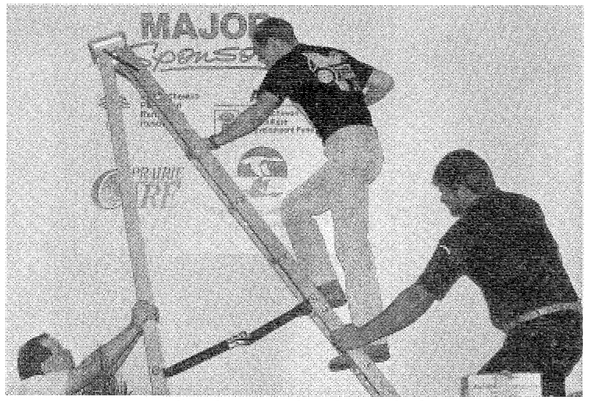
The most important single thing that can be done to maintain lumps is to slow down. Higher tillage speeds increases the break down of both lumps and crop residues. Replacing mounted harrows with a trailed rod or adding a trailed rod to a cultivator will help bring the lumps to the surface where they can provide the most protection.



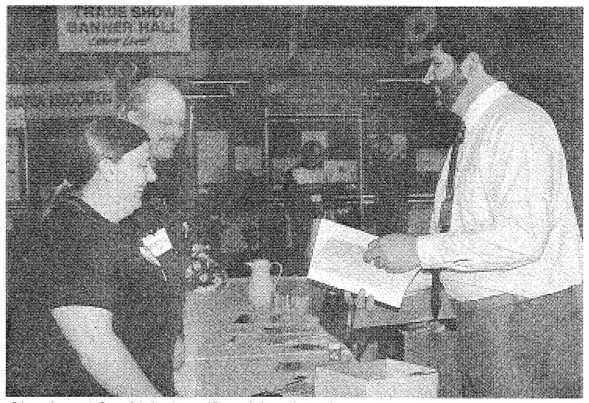
Using heavy-duty cultivator and harrows



Results utilizing heavy-duty cultivator and trailed rod



How many soil conservationists does it take to hang a sign?

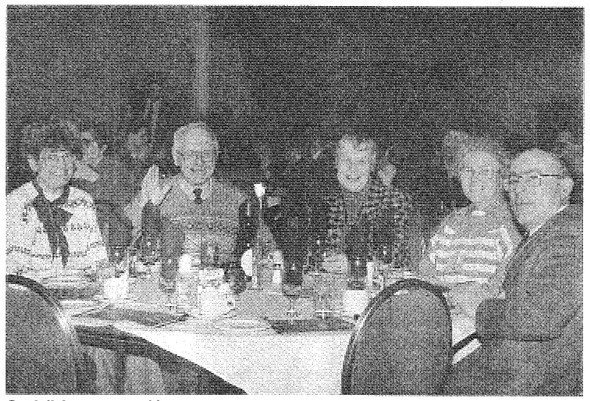


Glennis and Gerald Carlson (Sturgis) register for conference

Environmental Challenge Display — Swift Current Comprehensive High School

Harold and Pearl Plato (Burstall) share "Ideas That Work"

Student participation enhanced annual meeting

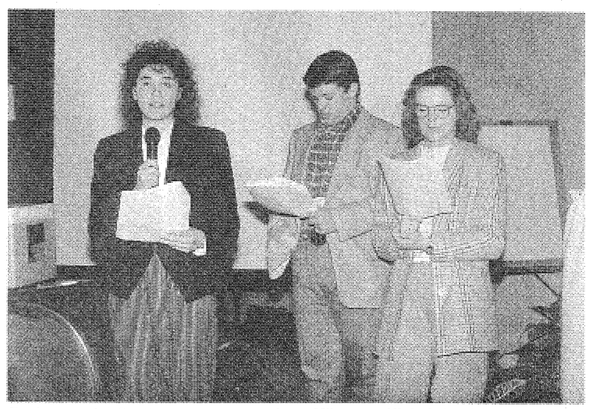


Socializing at annual banquet

Ken Allport (r) recognizes Brett Meinert for his contributions to the SSCA

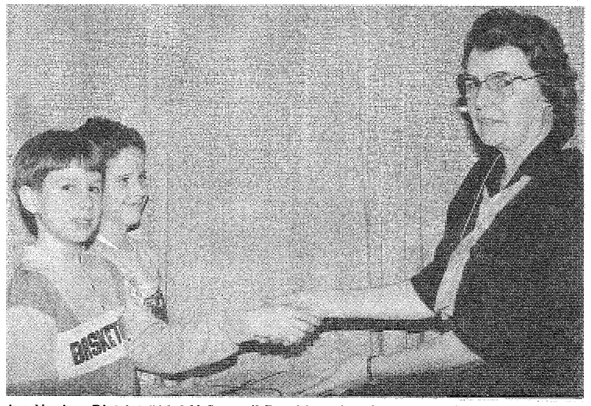
Trade Show focused on conservation equipment and ideas

Environmental Challenge winners from Bishop J. Mahoney High School of Saskatoon (l to r) Julie Stakiw, Colin Hynes and Melissa Engle



Environmental Challenge runners-up from Milestone High School (l to r) Shellan Kinvig, Mark Beck and Danielle Nicholas

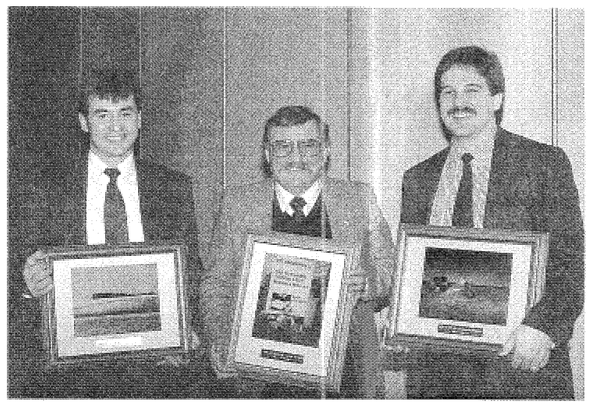
Environmental Challenge runners-up from Swift Current Comprehensive High School (l to r) Myles Radchenko (teacher), Christine Martens, Corey Steiniger and Crystal Rogowski



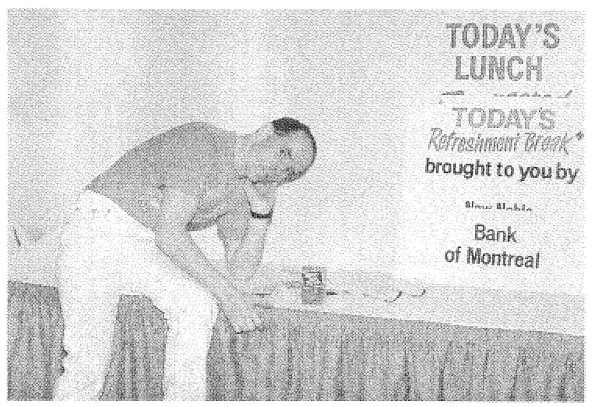
Ina Hanley, District #14 4-H Council President, hands out awards to conservation quiz contest winners

Ken Getz of Birch Hills (center) is this year's recipient of the SSCA Conservation Producer Award

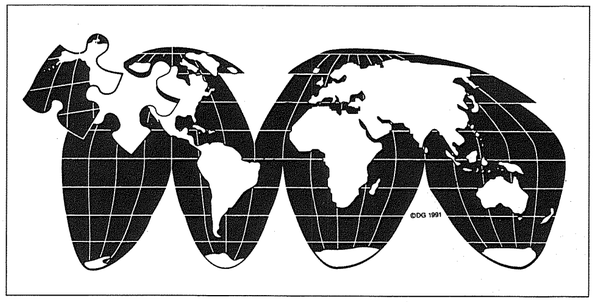
Mike Coroliuk (center) accepts the SSCA Group Conservation Award on behalf of the Soil Conservation Co-op of Bengough



SSCA Photo Contest winners include (l to r) Shaun Tomlin, Dave Bueckert and Dave Lukash



"Is the annual meeting over yet?" Garth Patterson



Conservation problems not only in Canada

By: Ian McPhadden

I would like to enlighten readers of the Prairie Steward about an opportunity of a lifetime.

It is with confidence that statement is made because I have just experienced such an opportunity.

The opportunity was to participate in a Nuffield Scholarship. The scholarship was originally based in England. It was founded in 1947 by William Morris who started out building bicycles, then the Morris cars. Mr. Morris became Lord Nuffield and progressed to manufacturing the Nuffield tractors, later named David Brown.

Lord Nuffield started two scholarships, one in medicine and one in agriculture. The basic intent of the agriculture scholarship was to transfer agriculture information internationally through travelling and hands on experience.

Countries, in addition to Canada participating in the scholarship are New Zealand, Australia, Zimbabwe and France. All scholars meet in England for about six weeks of work and travel as a group, visiting colleges and farms in Britain. As well, we visited the headquarters of the European Economic Community in Brussels along with numerous farms and industries in Belgium and France.

My own travels included Fiji, New Zealand, Australia, Singapore, Malaysia, Thailand, Germany, Denmark and Holland. In the next few issues I hope to relate and compare conservation issues and problems from some of the countries that I visited.

A definite realization that travel brings you is that problems in Canada with conservation, be they wind, water, tillage, soil degradation, salinity, chemical use, alternate cropping or the host of others, are not just "Made in Canada". These issues are similar to the concerns of people in most other countries.

To emphasize this, of the nine Nuffield scholars from five countries, six topics of study related directly to conservation, two to marketing and one to dairy production. We are not alone with our concerns.

My specific topic of study was soil conservation and the use of chemicals in agriculture. Solutions to these problems are also not unique. Each country has developed its own attack, some solely on the backs of farmers, some with government technical and financial aid, some with the hinderance of government policies.

I have purposely been general in my statements. My first submission is to inform all readers of the Prairie Steward about the Nuffield Scholarship. It is awarded annually and I would encourage people to look seriously at applying.

The second goal of this article is to make sure readers realize that conservation and environmental issues are not restricted to Canada. They are world-wide and growing in importance. Each country has a different way of dealing with conservation issues depending on what industry or group has caught the political attention.

In follow-up issues I will select specific countries and describe how their conservation practices and programs compare to ours.

(Ian McPhadden is a SSCA member and farms near Milden.)

Announcing the 2nd Annual Saskatchewan Soil Conservation Association Slide Contest

Categories:

1) ***Soil Degradation***
2) ***Soil Conservation***
3) ***Wildland Conservation***

Entry Deadline: January 17, 1992

Mail all entries to:

SSCA Slide Contest
c/o Mr. Garth Patterson
Regional Soil Conservationist, SSCA
3735 Thatcher Ave.
SASKATOON, Saskatchewan
S7K 2H6

For more information phone: (306) 933-5287

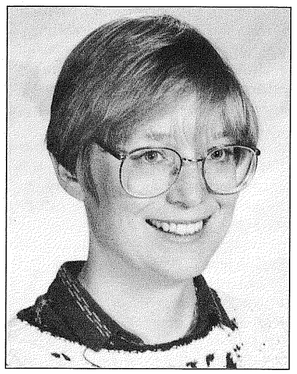
ELIGIBLE PARTICIPANTS: any amateur photographer except SSCA employees, board members and immediate families.

RULES:

- original slides only
- indicate category - caption optional
- submit as many slides as you wish
- entries will be returned after judging
  - LABEL ENTRIES CLEARLY
- judging by independent professional photographer
- SSCA reserves the right to use submitted picture in extension publications
- participants must be present at the 1992 SSCA Annual Meeting in order to win.

PRIZES:

- Enlargement of best slide in each category
  - to be presented at SSCA Annual Meeting February 9th and 10th, Prince Albert



Yvette Crane joins SSCA as Soil Conservation Educator

SSCA staff update

We are pleased to announce that Yvette Crane will be joining the SSCA's Regina Staff in December as a Soil Conservation Educator. Yvette has taught school in Regina, Yorkton and France and has a strong interest in resource/environmental education.

Yvette will be joining the SSCA to assist regional staff prepare their school activities and to develop a Soil Conservation Package for Project Wild. She will also work toward the development of accredited teacher courses on land degradation and continue developing the SSCA High School Environmental Challenge and Project Wild to complement ongoing agricultural/environmental education activities.

We would like to thank Leanne Paulsen for her assistance in the SSCA's Regina Office. Leanne has been helping to keep the SSCA's phone answered, messages/mail moving and the office organized. Leanne will be moving to Winnipeg with her husband and family. The office won't be the same on Thursdays and Fridays and we thank her for all the help.

Request For Submissions

Do you have ideas or comments on the conservation of our land resource? We would like to print them in future issues of the Prairie Steward. Perinent photographs would be appreciated) Please forward to:

The Editor
Prairie Steward
c/o SSCA
132 - 3085 Albert Street
Regina, Sask.
S4S 0B1

Prairie Steward . . .

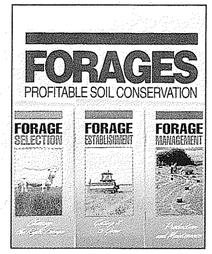
Conserving the Land Resource

The Newsletter of the Saskatchewan Soil Conservation Association Inc.

Winter Issue No. 5, 1991

SASKATCHEWAN SOIL CONSERVATION ASSOCIATION
in co-operation with the Agriculture Development Fund

In This Issue:



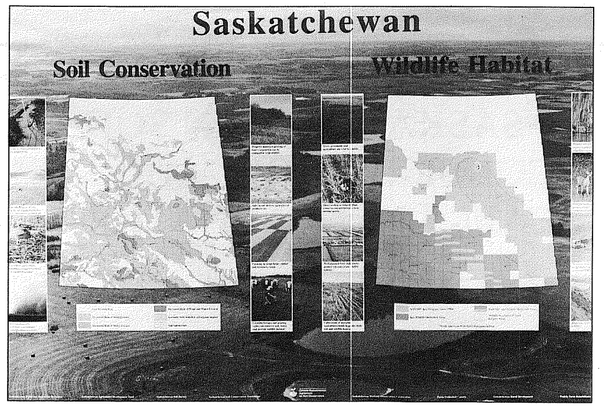
Soil conservation with forages

Three new booklets designed to help you choose, establish and manage forage crops for soil conservation are now available. They are:

Forage Selection: Choosing the Right Forage
Forage Establishment: Getting it Growing
Forage Management: Production and Maintenance.

The use of perennial forages in soil conservation is discussed in practical straight forward terms. Whether you graze, hay or want to use forages for salinity control, grassed waterways or wildlife habitat, you will find new information in all three booklets.

The publications are available at Rural Service Centres or by contacting any of the cooperating organizations: SSCA, Ducks Unlimited, SeCan, PFRA, or Sask Wheat Pool.



New soil conservation/wildlife habitat poster for Saskatchewan

The health of the soil resource is often reflected in the diversity and health of wildlife lands.

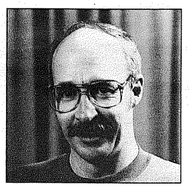
This past fall the SSCA released an educational poster highlighting soil conservation/wildlife issues and concerns. In cooperation with Rick Bates from the Sask. Wetland Conservation Corporation and Syd Barber from Sask. Parks and Renewable Resources the poster was produced to graphically show the concerns, issues and potential solutions to land degradation.

The maps on the poster were developed cooperatively by Saskatchewan's Regional Conservation Teams (RCT). These teams are working to promote both soil and related resource conservation in the six agricultural regions of Saskatchewan.

The poster has been distributed by numerous groups throughout Saskatchewan. Project Wild, a provincial environmental education program, has distributed posters to 5,600 cooperating teachers. Posters have also been sent to all schools in Saskatchewan.

For copies or more information, contact the SSCA Regina office.

Here's how we try to make soil conservation work on our farm



By: L. Brett Meinert
Former SSCA President

Soil conservation is an attitude. It's not a particular practice or series of practices. It doesn't necessarily involve the use of expensive, complicated machinery. Soil conservation can be free. Soil conservation is the basis for the future of the Prairies and anywhere agriculture is practiced.

This is perhaps a surprising statement, so let me give a couple of examples of what I mean.

- The tandem disc, second only to the deep plow in its ability to expose the surface of the soil, is considered a conservation-negative machine. However, what would you use to turn down a green manure crop without the tandem disc?

- Air seeders and zero-till drills, on the other hand, are considered to be conservation-positive machines. But they are often seen seeding into preworked, black summerfallow. Any other seeding implement would do an equal job of planting the crop.

In the first case, a perceived conservation-negative machine is used to accomplish a task which is very positive for soil.

In the second case, a perceived conservation-positive machine is used to accomplish a task which has no conservation benefit in conditions created for the machine, which are clearly negative to conservation.
The difference in the two examples is the attitude with which the machines were used.

It may be hard to develop practices in isolation. That's why it's important to create a network of friends, associates and others in conservation.

There are hundreds of other similar examples throughout the Prairies of attitudes and, therefore, results that are positive for conservation or otherwise, but the fact remains that if we do not conserve our precious soil our way of life is threatened. With the many other threats such as the illogic world trade, the various local, national and international policies of our governments, we, as a society cannot afford to ignore the conservation of our soils.

Every farmer has individual practices that are good conservation practices. Many, however, have failed to realize these practices are, in fact, good conservation and with a small change

continued on p. 4

Association Information

Gary Schweitzer
President, SSCA

President's message

Well, another growing season has come and gone and I'm sure that soil conservation is not at the top of everyone's agenda in these difficult times. I do however, sincerely hope that none of you decide to put your conservation practices on hold due to our present economic situation. We must keep in mind, as we plan for next year, that through good and bad times we are all responsible for the health of our land.

Provincial Election

Congratulations to the New Democratic Party on winning the provincial election. The SSCA looks forward to working with the provincial government on soil conservation matters that affect us all. Congratulations are also in order to the SSCA member Bill Boyd on becoming MLA for the Kindersley constituency.

SSCA Soil Conservation Video II

I'm pleased to report that SSCA is presently working on a second soil conservation video. **Soil Conservation Video II** will feature HOW TO segments on: **Direct Seeding Grain and Oilseed Crops; Seeding Forages on Saline and Erodible Lands; Conserving Soil and Enhancing Wildlife Habitat.** The video will be launched at the SSCA annual meeting in Prince Albert, February 10-11, 1992.

Annual Meeting

The SSCA Annual Meeting promises to be bigger and better for 1992. The theme of the conference, "The Direct Seeding Challenge -- Is It The Path To Profit?", will be thoroughly explored by renowned experts from throughout North America. The cost of registration has been kept to a minimum, so I hope that the majority of you can participate in this year's Annual Meeting.

Election Of New SSCA Officers

There will be three new people sitting on the SSCA Board of Directors for 1992-93. Nominations have been completed and voting for the Director for the South West will be finished November 30. Positions in the North West, East Central and for President-Elect have been filled by acclamation and the Board will soon be appointing a new member for the South East Region. Congratulations to all people who participated and good luck in the coming year. The SSCA executive looks forward to working with you and receiving your valuable input.

Soil Conservation is high priority

SSCA was happy to see that soil conservation received such a high priority with the Saskatchewan Round Table on the Environment and Economy. This recognition will ensure that problems of soil degradation will receive the attention that the SSCA believes they should.

Photo Contest

On behalf of the SSCA Executive, I'd like to congratulate the winners of the PHOTO CONTEST. Your contributions will add to the SSCA's collection of materials used in the education and awareness aspect of our mission.

That's it for now, see you all in Prince Albert for the Annual Meeting, February 10 and 11th. Have a good New Year.

SSCA Direct Seeding Conference + Annual Meeting
See insert for more information

Soil conservation: many ways to make it work

1992 Soil Conservation Workshop and Annual Meeting of the Alberta Conservation Tillage Society
January 13-15, 1992
Fantasyland Hotel, Edmonton

Featuring:

- producer presentations on conservation farming
- workshops on soil conservation equipment, rangeland management, wildlife and soil conservation issues, and sources of assistance for conservation activities
- presentations and panel sessions on weed control, cropping systems and other topics

Registration - $75/person or $125/couple
Hotel - 3 nights @ $65/night (single/double) + tax
Travel - bus or van leaving from North Battleford
approx. $50/person depending on attendance

For more information call Blair McClinton at 446-7650

Ken Getz - 1991 Producer Award

Mike Coroliuk - 1991 Group Award

?

1992 winners Could this be you?

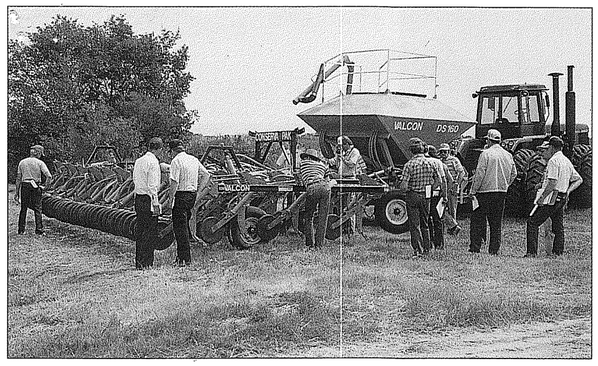
SASKATCHEWAN SOIL CONSERVATION AWARDS CALL FOR NOMINATIONS

The Saskatchewan Soil Conservation Association (SSCA) is calling for nominations for the Conservation Producer Award and the Group Conservation Award which will be presented at the SSCA Conference, February 10-11, 1992 in Prince Albert.

Jointly sponsored by the SSCA and the Western Producer, the Conservation Producer Award recognizes outstanding achievement in conserving the soil by a Saskatchewan farmer or farm family. Nominees will be judged on the practices used on their farms and their leadership in promoting soil conservation in the community.

The Group Conservation Award recognizes outstanding support for and promotion of soil conservation by a Saskatchewan group. Eligible groups include community and agricultural organizations, agricultural districts, 4-H clubs and others that have been active in soil conservation.

For more information on the SSCA Awards Program, contact the Soil Conservationist in your region, or SSCA, #132-3085 Albert Street, Regina, Sask. S4S 0B1, Phone: 787-0558.



Hope family delighted with their direct seeding system

Family switches to no-till farming

By: Blair McClinton

Many producers are considering making changes on their farms. However, fear of the unknown, especially in tough economic times, keeps them from actually making these changes to their production systems. Some producers are able to overcome these fears and make changes that help their whole farming operation. Cliff, Doreen and Todd Hope of Maidstone are one family that has made major changes in how they farm.

The Hopes farm 1500 acres in the Maidstone area. They have continuously cropped cereals and oilseeds for the past 15 years. They started to think about zero tillage in the mid-seventies. The idea of one pass seeding and fertilizing into unworked stubble appealed to them, but lack of good direct seeding equipment kept them from changing.

In the mid-eighties they started to have more problems with weeds in their conventional system. They realized that tillage was not the answer for controlling perennial weeds. Wind erosion was still a concern even though they were continuous cropping. "Somedays the dust would be flying after a field was harrow packed", says Doreen.

By 1989, they were convinced that they had to go to a direct seeding system. The Hopes still hadn't found a seeder that they considered to be adequate. They wanted a machine that would seed and fertilize in one pass. "I believe that if you want to start direct seeding you should go all out. Going half way isn't the answer", said Cliff.

Cliff was getting ready to build his own seeder when he read about the Conserva Pak in the spring of 1989. The Hopes attended a field day demonstrating the Conserva Pak at Indian Head. They were convinced that this was the seeder they were looking for. They decided to buy one in time to seed their winter wheat and fall rye in the fall of 1989.

The Hopes have now completed two field seasons with the Conserva Pak and are very happy with their direct seeding system. They believe their yields have either remained the same or increased slightly and weeds are becoming less of a problem.

"We did a lot of research on zero till before we started", said Cliff. "Since we knew what we were getting into, we were able to avoid many problems. We took some flak from our neighbours in the first year about our 'messy' fields, after seeding, but they kept quiet after the crop was up and looked the same as their fields."

Weed control requires a great deal of attention in direct seeding. Cliff believes that it is important to monitor weeds throughout the year. This allows him to get better timing with his herbicides and helps him avoid spraying for weeds that are not present.

The Hopes' weed control program is typical for direct seeding systems. They fall spray for winter annuals and perennials such as Canada thistle and quackgrass. They spray before seeding with herbicides such as Roundup and Rustler to kill any weeds already growing. They spray in-crop for the weeds present, usually broadleaf weeds. This year the Hopes' only sprayed one quarter for wild oats.

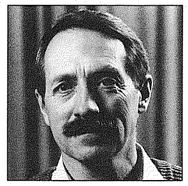
"Our chemical bill hasn't changed much over the past two years after switching to zero till. We spent a little more than normal in the first year to get our fields in shape, but this year we spent less on herbicides than normal," says Cliff.

One bill that was dramatically reduced by direct seeding was their fuel bill. Cliff says that they used one-third of the fuel they normally use.

Many people ask how the Hopes can justify the expense of a zero till seeder like the Conserva Pak. The Hopes believe you can't justify keeping conventional tillage equipment around when you're zero tilling. By selling off unnecessary equipment, they've been able to keep their total equipment costs down. The only piece of equipment they have left to sell is a tandem disc they took on trade while selling their other equipment. This leaves them with a tractor, seeder, truck sprayer, swather and combine to do all their work.

Even the Hopes' neighbours are starting to be convinced of the benefits of direct seeding. The Hopes have cooperated with the District 35 ADD Board by custom seeding plots for their neighbours through the SOS program. More producers are asking for custom seeding than the Hopes can do with one machine. A few of their neighbours are now seriously considering buying direct seeding machines and changing their systems.

Conservation planning delivers economic value



By: Bob Linnell
S.E. Soil Conservationist

If current conservation programs were withdrawn, what would stick in your mind as the one feature of soil conservation that would help you make the right decisions concerning the future of your land? Would current economic conditions affect your ability to make those decisions?

I've been asking these questions and the most frequent answer I've received to date is that "it depends on whether I would have the resources in terms of equipment, time, labour and knowledge".

Many people have been working hard to spread the soil conservation message and demonstrate different conservation techniques that can be applied to specific farms and to different areas of the province.

But, have producers really learned from their experiences of the past two growing seasons? The answer here is a resounding "YES". By seeing new techniques and practices at demonstrations, some producers have modified and adapted these practices to their own farming system. Producers have learned to look critically at their land and have become better soil managers through the programs being offered.

They have experienced the benefits of field shelterbelts, trash management, strip cropping, extended cropping, reduced tillage in fallow, forage plantings, wildlife enhancement and conservation planning.

They have also learned that economics plays a major role when planning a conservation system. Through conservation programs, farmers have experienced economic realities that make conservation planning attractive. They have come toe realize that one application of a herbicide in place of a cultivation pays many benefits to the farming operation. They know that trees can increase profits through the prevention of wind erosion and by trapping snow on the land, thereby increasing yields. Through direct seeding, farmers have learned to leave their fields covered with trash making the land less susceptible to wind erosion and enhancing wildlife habitat.

For those of you who have not included conservation planning in your farming operation, I urge you to seek advice from your neighbours or consult a conservation specialist in your area. By doing so, you will realize the economic value conservation planning will have for your farming operation.

Conservation equipment helps farmers realize economic value

SSCA goals & objectives

(Our future direction)

We thank the members who took the time to tell us their thoughts about SSCA goals & objectives in a recent questionnaire.

We will be compiling their views and will report back to the membership in the next issue of the Prairie Steward.A guide to soil, water and wildlife habitat conservation programs for Saskatchewan farmers and ranchers has been developed by the Saskatchewan Soil Conservation Association (SSCA).

The conservation program directory highlights programs delivered by the provincial and federal governments and by private non-profit organizations in which farmers and ranchers can actively participate. The programs offer technical or financial assistance, education opportunities or recognition for a landowner's conservation effort.

For more information on the conservation program directory, or to get your free copy, please call or write to the:

Saskatchewan Soil Conservation Association (SSCA)
#132 - 3085 Albert Street
Regina, Sask.
S4S 0B1
Phone: 787-0558

Tour proves to be educational

By: Pat Flaten
S.W. Soil Conservationist

All Aboard!

I learn most from seeing and doing. That's what's great about tours. A van load of southwestern producers and staff headed for Montana and Alberta in July. We invested three full days in visiting research stations and discussing programs, policies and practices with local counterparts.

> ***I learn most from seeing and doing. That's what's great about tours.***

First stop: Havre, Montana. Fort Assiniboine, a unique historical site, has been transformed into a research centre of Montana State University. One study uses our own locally developed Indianhead lentils as a green manure crop. Scientists are trying to work out a system of pre-determining when to kill the lentils on the basis of moisture used.

A range management issue was raised which related to the U.S. Conservation Reserve Program. One plot of native pasture has not been grazed or cut for 75 years. We saw that the health of that stand has been hurt, rather than helped as compared to the grazed area.

We were treated to a quonset discussion (as opposed to round table discussion) with local farm leaders and soil conversation staff. My general impression was that "compliance" was a necessary evil which could produce some good in the long run. However, a dust storm which interrupted our conversations indicated that there is still some work left to do.

Second Stop: Conrad, Montana. This was our salinity day, organized by Jane Holzer (who you may remember from the 1989 SSCA Annual Meeting in Swift Current). Her group, the Montana Salinity Control Association, provides investigations and recommendations for saline land in 20 Montana counties. The most resounding point made was that in order to reclaim discharge (salt-affected) areas, it is necessary to focus on managing the water in the recharge areas. Local seeps appear to respond well when tap-rooted alfalfas are planted on the recharge areas.

The Conservation Reserve Program was caught in controversy once again. Forages seeded to control erosion, but left unused, will catch more snow and therefore increase soil moisture levels.

The forage species being planted, however, are not able to use the moisture. Unused moisture can then add to salinity.

On the way up to Lethbridge, we briefly visited the Conrad Research Centre before continuing with our salinity theme in the Warner area, just north of the GST collection point. We saw, once again, that managing the water in the recharge areas of local seeps really works.

Third Stop: Lethbridge, Alberta. The research station was a real highlight for us. Two of the most unique experiments are locally known as the "scalping" and "trucking" experiments. Scalping refers to simulated topsoil erosion at 5 cm intervals up to a 20 cam depth. The first harvest showed a 67% wheat yield loss where 10 cm of topsoil was scalped. Fertilizer, manure or topsoil were added to see if the pre-scalping yields could be brought back. Manure seems to be the most effective amendment of the three at this point.

The "trucking experiment" brings new meaning to the prairie term "patchwork field pattern". Thirty-four topsoils and two subsoils have been trucked in from all soil zones to one site. The purpose of the study is to evaluate the productivity of these soils without climate and subsoil variability affecting the results.

Alberta soil conservation programs were introduced to us by Lethbridge staff. They are using a variety of approaches to educate the public. They believe they can encourage creativity by using on-farm conservation planning as much as possible, sometimes hiring consultants when staff aren't able to fill the requests.

Fourth Stop: Home Sweet Home. Now is the hard part: deciding which approaches to soil conservation could be applied where it really counts - right where we are.

Soil Conservation tours allow producers to see techniques and practices first hand

Students show interest in soil conservation

By: Juanita Polegi

"Do dead beetles become organic matter?" "Is the salt in the soil the same stuff we put on our food?" "How do you make your slide projector go backwards?"

These are just a few of the many questions received by the Regional Soil Conservationists employed by the Saskatchewan Soil Conservation Association (SSCA) when they visit Grades 5 & 6 students.

> ***While school presentations are the most common method used for working with students, the Conservationists have also found that field trips are met with a great deal of enthusiasm by the students.***

Since the fall of 1990, SSCA Soil Conservationists have visited over 70 schools presenting information on the importance of soil and soil conservation. The age group targeted for the presentations is the 10 and 11 year olds. It's interesting and fun to work with students in Grades 5 & 6. They have sufficient intellect that they can relate to the stories you tell them and yet they have no inhibitions about showing interest in the topic or asking questions.

The students remember seeing soil in the snow-filled ditches and want to know what occurs. They also remember that it's always more calm behind a row of trees on a windy day than out in the open. Those memories pique the interest of the children so they're eager to learn about the different soil conservation techniques.

While school presentations are the most common method used for working with students, the Conservationists have also found that field trips are met with a great deal of enthusiasm by the students. Full day or half day tours around an area where examples of soil erosion and sound soil conservation practices are shown have proven most successful. The students enjoy getting out of the classroom and seeing first hand what it is we are trying to teach them.

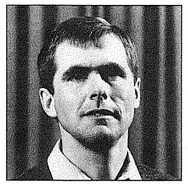
SSCA Regional Soil Conservationists may be available for school presentations. Teachers of all grade levels are invited to contact their local Conservationist if they require information on soil conservation or would like a presentation made to their students.

Soil Conservation . . . it's in everyone's hand - including youth.

For more information contact:

Blair McClinton North Battleford 446-7650	Garry Meier Tisdale 873-4290
Garth Patterson Saskatoon 933-5287	Bob Linnell Weyburn 848-2381
Pat Flaten Swift Current 778-8284	Juanita Polegi Yorkton 786-1526

Bountiful harvest



By: Garry Meier
N.E. Soil Conservationist

By the time this edition of the Prairie Steward reaches your mailbox, harvest 1991 will be a memory; the people's choice will be assuming their duties at the Legislature in Regina and the standing stubble from your 1991 crop or conservation fallow will be filling up nicely with snow.

The North East Region enjoyed a bountiful harvest with good yields and good quality being the norm rather than the exception. Farmers in the region who direct seed normally, or had an opportunity to try direct seeding for the first time through one of the ADD Board programs, were, on the whole, very happy with the results. Yields were as good as or, in many of the drier areas, better than the adjacent conventionally tilled fields. In virtually every case the direct seeded fields translated into more dollars in the producer's pocket.

> ***In virtually every case the direct seeded fields translated into more dollars in the producer's pocket.***

Once again, there is a higher than normal percent of standing stubble going into the winter season. There are three possible reasons as to why this has occurred again in1991. They are:

1) Due to the very dry soil conditions, producers could not do what they considered to be an acceptable job of tillage this fall.

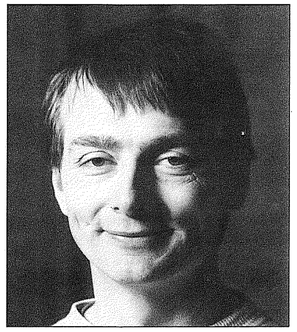
2) The North East Region had up to six inches of snow on October 15-16 . . . which did not melt.

3) More and more producers are looking at direct seeding in 1992 and utilizing their stubble to trap snow to enhance 1992 crop yield potential.

There are many informative extension events planned for the North East Region this winter. Improving your farm's profitability through a direct seeding system will be the keynote topic at many of them. Hope to see you there.

Direct seeding equipment available through Add Board program

SSCA Board of Director Profiles



Fred Phillips

- Director, East Central Region
- Age: 39
  - 2 daughters
- Farms in Yorkton area
- Grows grains and oilseeds
- Black Soil Zone

Q: How long have you been practising soil conservation?

A: My brother and I have been trying different conservation techniques since 1977... even when we summerfallowed, we tried different ways of doing it so that our soil wouldn't blow as bad.

Q: What conservation techniques do you practice?

A: We continuous crop and zero till our land. We always make sure that we have good cover on the land and that means harrowing a couple of times in the fall and spraying chemical.

Q: Would you ever go back to traditional farming?

A: No, we'd never go back to the 50/50 tradition. I still know people who work their land 7-8 times a year because their father worked it 7-8 times. We'd never do that. Right now, we're finding that zero tillage is working and it saves us a lot on fuel costs. We save a lot of time because we're only running one piece of equipment and the sprayer. Our hours in the tractor are way down. We're only running 300-400 hours in a year compared to 1000 hours in our traditional ways. Once you get over the initial investment of a piece of equipment, most of the other expenses, except for spraying, go down.

Q: What will conservation have done for your farm by the year 2000?

A: Well, we hope our land will be in better shape because of the amount of fibre that will be in our land. Even now, you can see the difference where we're not cultivating anymore. The top soil never gets that hard pan on top, even when it's hot and dry. It doesn't get gaping cracks in it and it doesn't blow like before.

Q: Why isn't everybody in the province practising conservation?

A: I think there's a number of reasons. One is that there's very little information available and it's like learning to farm again. Another is that a lot of farmers don't want to be the first to try new practices. I think there's a fear out there because if you're making money know, it's really hard to try something new. By making one bad mistake, you could put yourself out of farming. . . so there's a certain amount of apprehension about trying something that you haven't before. I think fear is the biggest obstacle.

Q: Is the information available getting better, or do we need a lot more?

A: Some of the information is better now, but it's still not as good as it could be. There should be more research done in long-term projects. I think we have to convince the next generation that land is worth something, and that dust blowing in the fields is not part of farming. You've got to put a value on everything and by doing that, I think the next generation will pay a lot more attention to the problems we now face. The general public must also try to understand what is happening on farms and by acknowledging the value of the farm they, too, can play a role in preserving our way of life.

Q: Since this is your last year as a board member with the SSCA, what are some of the accomplishments that you feel have taken place?

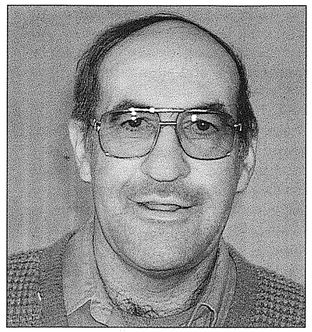
A: There is a new awareness of soil conservation in the province which I attribute partly to the SSCA. We've got people working in the school systems, we've got technicians out in the field and this creates an awareness that was never there before.

Q: Is the SSCA going in the right direction?

A: I think we need to do more extension work. We have to get more involved with different groups. You've got to go out to the guy who maybe doesn't know a thing about soil conservation and doesn't really want to know anything about it. We have to prove to him that soil conservation, in the long haul, will save him money. The SSCA will never convert all farmers at once, but get to a few of them and, in turn, they will talk to their neighbours and then you'll see results.

Q: Do you think the soil conservation battle will ever be won?

A: I don't think so, because there will always be people who don't want to change. Once you've convinced the majority that soil conservation is profitable, we will see a big switch to conservation practices, but I don't think we will be able to convince everyone.



Gerald Girodat

- Director, South West Region
- Age: 49
  - married to Helen
  - 4 children
- Farms near Shaunavon
- Grows pedigreed seed and grains
- Brown Soil Zone

Q: How long have you been associated with the SSCA?

A: Since 1987. I didn't become a director until 1989 and this will be my last year of sitting on the SSCA Board of Directors.

Q: Why did you get involved with the SSCA?

A: I have a salinity problem and I was interested to see what this organization could offer to rectify it. I was interested to see what this group could do about soil erosion, salinity and other forms of soil degradation, so I became involved.

Q: What are some of your conservation practices?

A: Some of our land in this area is fairly light textured so we were always pretty concerned about the soil. Wind erosion, salinity and water erosion were all a concern so we tried different techniques to rectify our problems. In the problem areas, we kept our strips smaller and tried to keep the trash cover a little bit heavier. I'm also using 2-4D to replace tillage, if we get enough moisture to germinate the flixweed and stinkweed.

Q: Will your saline land ever recover?

A: I don't think it will ever be totally restored. I'm trying to put the most severe areas back to grass. A lot depends on the degree of salinity that is there. There are some areas that will never be used for cereal crop production again; they will always be in some type of forage crop. I started working the area with a slender wheat grass and I thought I might try to work alfalfa in once the salinity is a little more under control.

Q: Are there a lot of farmers practising soil conservation in this area?

A: Because this area is low lying and we get a lot of wind, people have generally been pretty conscious of wind erosion. We've kept the land in smaller strips and kept more trash on the surface. I think people have always been fairly cautious how they work the land. In the last couple of years I've been really surprised by the number of people who have started using 2-4D in the fall or the spring instead of cultivating. I think when one guy starts and neighbours see the results, you soon have others following. Everyone is a little scared at the beginning, but it doesn't take long to see the benefits of practising soil conservation.

Q: What other methods can be used to show people that soil conservation works?

A: The education system would have to be one of the better methods of getting the word out. The SSCA is presently doing a lot of work within the school system and I think that this could very well be one of the best tools because it prepares students who will one day be taking over our farms. The newsletter and some of the demonstration projects that have been organized in our area are also a positive factor in educating people.

Q: Do you see the government eventually going the way of the Americans in legislating conservation compliance?

A: In brief, my feelings are that the American program is not quite as good as they let on. I think U.S. farmers come up with conservation plans just to conform with the program. I don't even know if they write their own conservation plans. The experience I had this summer, in Montana, showed me that in some cases the people that were in charge of the program wrote the conservation plan for the farmer. I don't know how sincere some of those guys were. I think the voluntary procedure, through organizations like the SSCA, is probably a better way to go. The governments should certainly be aware of the need for conservation, but I would hate to see them use compliance. It's like a lever or an axe over your head and that's not healthy for anyone.

Q: What are some of the benefits you have enjoyed by being associated with the SSCA?

A: Just being associated with other people who have the same interest and problems that I have is a benefit. Sharing experiences, attending annual meetings and meeting people who are experts in their fields have proven to be very positive to me. I encourage any farmer to join the SSCA and to experience the benefits that this association has to offer.

Conservation work on our farm

(Reprinted from Aug. '91 issue of Grainews)

(continued from p. 1)

in attitude, their conservation could be strengthen many times over.

Developing and strengthening our own conservation practices and attitudes are not difficult things. They do, however, require a little persistence.

The first thing we did was to identify our dreams, goals, objectives and plans. When I described my conservation activities to a relative who has no contact with the soil, his question was, "Does this mean 100 years from now, your land will be a foot higher than your neighbor's?"

Well, perhaps that can be my dream. My goals include reducing the soil degradation on my farm to nearly zero. One of my objectives is to assure a continuous cover of crops on our land through the summer months. We seed, with adequate fertilization, a portion of our land, chem-fallow another portion, and, where tillage is required, seed annual barrier strips in the summerfallow.

It may be hard to develop practices in isolation. That's why it's important to create a network of friends, associates and others in conservation. Plan, as often as possible, to join groups and associate with people who speak progressively about cropping, harvesting, managing and so on.

Progressive groups can help us be comfortable about trying something new, encourage us in improving the new idea and support us when we get the feeling we're the only strange one in the area trying new ideas.

Having an ongoing relationship with agribusiness is important as well. The technical information I get gives me a better concept of what can be done and how easy it is to do it. Being on a first name basis with chemical company, fertilizer company and machinery company representatives carries the risk of being the first to be 'sold' on new products, but it also gives us first chance to evaluated them.

Where else can you get reasonably reliable predictions about what will come along in the near future? It's also easier to call someone you know to get information. It's important that the someone you call has the information you want.

I have been lucky in the contact I've made through the Innovative Acres Program, through the Saskatchewan Soil conservation Association, through the ADD Board structure, through provincial level committee work. All of these people are extremely approachable and stimulating in their conversation, thoughts and opinions.

These three groups, our network of friends and associates, our agribusiness contacts and our professional community contacts give us the confidence to do new things, to develop dreams, goals, objectives and plans.

You, too can gain by working with these groups, and you'll find you have already made big progress on the second step - to expand your knowledge of conservation. The third step is, of course, to put into practice the ideas you have come up with.

If you have followed me this far, you are now ready to head the Code of Conservation Ethics identified by the Saskatchewan Soil conservation Association. As you read this code, you will see there is nothing magical about it. There is, however, something magic about the results of following such a code. You'll see for yourself as your production goals change.

Based on integrity, principle and an understanding of the fragile Prairies environment, a Prairie Steward strives to:

- Manage the land for the benefit of both present and future generations.
- Harvest agricultural products on an economic yet sustainable basis.
- Restore damaged or degraded lands to beneficial agricultural, wildlife habitat or environmental uses.
- Ensure that the land is protected against soil degradation.
- Use agricultural chemicals only when necessary and in a manner which does not harm the land, environment or the health of neighbors.
- Reduce and reuse by-products of the agricultural enterprise in an environmentally sound manner.
- Recognize that agriculture, wetlands, native rangeland and wildlife habitat are all valued uses of Saskatchewan's land base.
- Support activities for advancing soil conservation.
- Gain a greater understanding of new and existing soil conservation techniques.
- Encourage society to conserve the land resource.

Marylyn Josvanger of Regina was the winner of the VCR draw for the purchase of a Soil Conservation video. Guy Chartier, SSCA Communications, made the presentation.

Conservation at its best?

By: Nodrog Thgink

Well, it's Agribition time again. The wife and I are in Regina for a well-deserved holiday. The kids are staying with Grandma and Grandpa. Sure is nice not hearing them complain.

I am proud to say that despite the above normal rainfall, my summerfallow fields were worked at least six times. The one-way did such a good job the first time that it was used for the second and third operations. The field is black now, but I would still like to work it once more before winter really sets in.

For quite some time this summer I didn't know if I was going to get the sloughs drained. Things started to dry a bit in July and before long I had the breaking disc out. With the exception of being stuck for a couple of weeks, things went fairly well. After two passes there was still too much grass so I flicked my BIC. A quick remedy. Should be ideal for seeding wheat next spring.

Never in my years of farming have I seen ducklings move so fast to get out of the way of machinery. Must be the result of evolution or something.

The dry weather in August allowed me to fill every pothole on the farm. Won't the duck be surprised next year when it's time to lay.

I nearly went back on my word in July. The announcement of the Permanent Cover Program II appeared to be the solution to my financial woes. After careful deliberation, I decided not to enroll. This land produces good grain crops once every five years. I don't want to take it our of production for 10 or 21 years. You never know what will happen with future GATT talks.

To get my acreage up this spring for GRIP, I broke another quarter of stony land. After two engine overhauls and replacing 200 discs I managed to get the job done.

With this event, the annual two weeks of stone picking turned into four. The neighbours have often commented about our "family togetherness". Some even wish they had stones to keep their kids at home.

Thanks to GRIP my Class M,O and P land made me more money this year than ever before. Sure was worth the high cost of the premium. Why would anyone seed forage?

Had some problems with harvest this year. To prevent seeding problems in the spring I burnt all of my stubble. Should be a treat seeding with my Massey Ferguson 36's. Hopefully the loose trash will disappear soon.

Besides stubble burning, post-harvest activities focused on the preparation of a half-section I recently purchased. It was literally a steal: half the previous purchase price.

This land was in the previous owner's family for 80 years. IT WAS IN POOR SHAPE: Shelterbelts, wetlands, burrowing owl habitat, stripcropping, forage, and even a five acre block planting between two bluffs.

I removed the four miles of trees his father and grandfather painstakingly planted more than 25 years ago; and also the wildlife planting that had been established for about four years. I drained and broke a large slough converted to a wetland nearly 10 years ago. I intended on saving the burrowing owl area but because of the hassle of too many corners, it fell by the wayside too. The end result: 160 acres ready for grain. Quite the accomplishment, eh?

When a neighbour saw what I had done, he told me to go to the local Rural Service Centre. Not only are these places hard to find, but they are not able to provide information on the benefits of burning stubble, draining sloughs, filling potholes, or removing shelterbelts.

When the Extension Agrologist heard my request he suggested that I seek "Professional Help", or contact the ADD Board. I opted for the latter. A big waste of time. It was my belief that the Rural Service Centre and the ADD Board are involved in a great conspiracy. What? I haven't figured it out yet. But when I do, you'll all hear about it.

Well the wife's breaking in on my contemplations. She wants to go look at the Lifestyles exhibits, so I will stop for now.

Hope you learned a thing or two that might work on your farm.

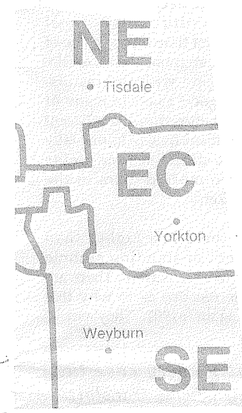
Soil fertility management for forages

By: Blair McClinton
N.W.. Soil Conservationist

In theory, perennial forages have the ability to live indefinitely. However, in the real world many factors affect a particular stand's ability to survive. Climate conditions, grazing and haying practices, and soil fertility are examples of factors that affect forage stand longevity. Of these, soil fertility is one factor that is often overlooked.

Grasses

It is common for grass stands to become non-productive from low soil



fertility. One of the most common reasons that grass stands are plowed under is from becoming "sod bound". "Sod bound" stands can be a symptom of nutrient deficiencies. The "sod bound" grass produces an extensive root system to search for nutrients. Fertilizing will not compensate for poor grazing or haying management, however, "sod bound" grass stands can be avoided through proper fertility management.

Grass species have relatively high nitrogen (N) requirements. They also require smaller amounts of phosphorous (P), potassium (K) and sulphur (S). Fertilizer responses of grasses are related to moisture conditions. Where moisture conditions are favorable, grasses will respond to high rates of nitrogen fertilizer and to moderate rates of phosphorous, potassium, and sulphur on soils deficient in these nutrients.

Legumes

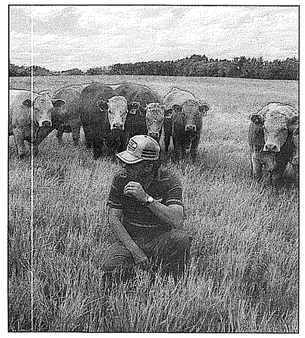
When properly inoculated with rhizobium bacteria, legumes such as alfalfa can use nitrogen from the air and therefore need little or no additional nitrogen from fertilizer. However, legumes require relatively large amounts of phosphorous, potassium and sulphur. Legumes will respond to additions of these nutrients as fertilizer when they are not adequately supplied by the soil,

Saskatchewan soils are not high in phosphorous, therefore legumes generally will respond to phosphate fertilizers. Saskatchewan soils generally contain adequate levels of potassium, but man grey-wooded soils and some black soils are deficient in sulphur for legume crops.

Climate conditions, grazing and haying practices, and soil fertility are examples of factors that affect forage stand longevity.

Grass-Legume Mixes

When grass-legume mixtures are grown, it is not possible to provide the ideal combination of nutrients to both grasses and legumes. For example, if nitrogen is applied to a brome grass-alfalfa crop the brome grass will tend to increase at the expense of the alfalfa. The alfalfa will also use some of the nitrogen fertilizer and fix less nitrogen from the air. However, grasses growing with legumes do not obtain nitrogen directly from the legume and usually produce higher yields when fertilized with both nitrogen and phosphorous than with phosphorous alone.



Larry Moen checks out Crested Wheatgrass

Fertility Management

Getting the most value from fertilizer inputs is the same for forages as for annual grain crops. Soil testing is the foundation of all fertility management programs. Soil testing will provide information on the nutrient levels in the soil and recommend fertilizer rates to help achieve production goals.

Fertilizers should be applied in late fall or early spring for best results. Split applications are possible with half of the fertilizer applied in the late fall and half in June. This allows the fertilizer program to be tailored to the actual growing conditions (wet or dry). Larger fertilizer applications, applied once every three or four years, also have been used successfully in Saskatchewan.

Fertilizers are not the only sources of nutrients for forages. Livestock manure also can be an excellent nutrient source.

Since soil fertility is only one of the factors that affects stand health and longevity, fertility management should be considered part of an overall forage management system.

Do Rotary Harrows have a place in your farming operation?

Conservation Benefits of Rotary Harrows: Fact or Fiction?

By: Garth Patterson
W.C. Soil Conservationist

The concept of ground-driven, rolling harrows has been around for a number of years. This year, three companies are marketing a new generation of rotary harrows in Saskatchewan. They are being touted as conservation tillage implements that will anchor crop residues, control weeds, incorporate chemicals and prepare seedbeds.

To date there has been no independent researching Saskatchewan on these new harrows. Mr. Kevin Bligh, an Australian researcher, reported that the Australian rotary harrows do a good job of incorporating chemicals and conserving residue. In 1985, PAMI tested a product similar to the new rotary harrows, called the Miller Rotary Flex Weeder. PAMI found that the rotary weeder left an even field surface, provided good soil mixing for chemical incorporation, anchored residue, and, when adjusted properly, provided a good weed kill. The weeder did plug with rocks, roots and straw. Rocks also broke or bent some teeth.

Some observations from seeing the new rotary harrows operate this past summer are:

1) They are not a primary tillage implement. If used in a very firm field, they will only scratch the surface, providing poor weed control and very little soil mixing. Preliminary work by PAMI suggests that under certain conditions, there may be enough soil mixing to incorporate herbicides in stubble.

2) Under mellow and loose field conditions, small weeds (less than 10 cm) are usually plucked out, and soil mixing is achieved. Chemical companies are now evaluating these implements for herbicide incorporation.

3) One producer reported that his rotary harrows did an excellent job of breaking crusted soil prior to seeding.

4) Residue appears to be left on the soil surface. Some agrologists believe that the straw is not anchored enough to prevent wind erosion.

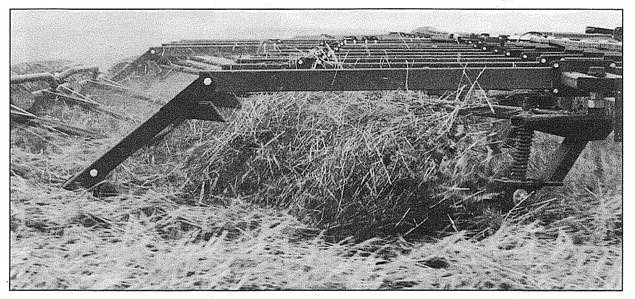
5) All of the rotary harrows appear to handle various types of residue without plugging. Unlike tine harrows, spreading of residue is minimal.

6) Although the harrows do level and mix the soil, they do not pack it.

7) Rotary harrows pulled behind a wide blade cultivator improve the weed kill, especially under moist conditions. Unfortunately, this also results in less standing stubble.

8) Use of the harrows in stubble may promote weed growth. This may be useful in stimulating pre-seeding weed growth in extended rotations.

If you are in the market for rotary harrows, find out their pros and cons from producers who have used them. Then evaluate your own operation and decide if they will be of benefit both now and in the future.



Do Rotary Harrows assist in trash management?

Plan profitable shelterbelts

(continued from p. 5)

WBECON also takes account of the less explicit, but perhaps more important, costs of growing shelterbelts such as crop competition, land occupied, and reduced benefits during the years before maturity. The program assumes that there are only costs and no benefits from shelterbelts for the first six years.

WBECON Sample Summary Page

Economic Benefits of Field Shelterbelts

design: 2 direction: 4
soil zone: 2 soil texture: 3

Name: J. Farmer
Address: Sask.
Land Location: Township Range Meridian

Shelterbelt Information

Tree Species .....Mixed Ash and Caragana
Between Row Distant (ft) 610

Site Preparation ($/mi)	100	Routine Maintenance ($/mi)	50
Establishment ($/mi)	180	Renovation ($/mi)	400
Replanting ($/mi)	120	Removal Cost ($/mi)	1200
Maintenance ($/mi)	100		

Crop Information

Farm Location .....Canadian Prairies

Crops	Spring Wheat	Spring Wheat	Summer Fallow		
Unsheltered Yield/ac	28	20	0	0	0
Crop price ($)	$2.50	$2.50	$0.00	$0.00	$0.00
Crop input ($)	$70.00	$75.00	$20.00	$0.00	$0.00
Crop yield index	1.0	1.0	0.0	0.0	0.0

Assumptions

Competition at maturity (%) 3.4
Land occupied at maturity (%) 3.0
Yield increase at maturity (%) 16.9
Lifespan (years) 80
Height at maturity (feet) 30

Protective Index of shelterbelts ..... .95
Discount rate used to calculate Net Present Value 5

Summary Report

Annual benefits of the shelterbelts at maturity

	Rot.1	Rot. 2	Rot. 3	Rot. 4	Rot. 5
Net Yield incr. (5)	10.5	10.5	0.0	0.0	0.0
Econ. Benefit	$1461	$1151	$47	$0	$0

Total Economic Benefit Over Shelterbelt Lifespan
In Constant Dollars [1] $59271
In Present Dollars [2]
(Discounted at 5.0% Per Annum) [3] $8423

1) Constant dollars - all input and output prices are held constant at the first year's price levels throughout the lifespan of the shelterbelt. This produces constant dollar benefits.
2) Present dollars - the value today of a benefit or a cost expected in the future. Present value discounts (reduces) the value of future benefits or costs because people value the present more than the future.
3) Users of WBECON can change the rate at which the future benefits and costs are discounted. The higher the discount rate, the less value future economic benefits and costs have now; the lower the discount rate, the more the future is valued now. Economists usually use a discount rate based on the interest rate minus the rate of inflation.

The increase in crop yields attributable to shelterbelts is a major factor in determining their economic value. According to Kort, long term studies show that shelterbelts generally contribute to increased crop yields over the lifespan of the trees. Actual yield increases depend on a number of environmental, agronomic and shelterbelt design factors which WBECON analyzes. These are discussed in the following paragraphs.

The program allows the user to enter up to a five year crop rotation along with the chosen shelterbelt design. WBECON then examines the proposed shelterbelt and crop system for the amount of available moisture, the wind direction and the protective value offered by the tree species and shelterbelt design. Important variables are the lifespan, height, porosity, number and alignment of belts on a 160 acre field.

WBECON accounts for the different responses of various crops to shelterbelt protection. Drought tolerant crops such as wheat respond least to shelter. Shelterbelts also benefit crops differently in various climatic regions. They usually give the highest percentage yield increases in drier areas.

The benefits of shelterbelt protection vary with distance from the shelterbelt. Crops immediately adjacent to the trees produce much less than unsheltered crops. The greatest production increases occur from two to four times the height of the trees away from shelterbelts on the leeward side. Further away from the belts the benefits decline, but they are still measurable up to fifteen times the height of the trees away. There are some crop yield benefits on all sides of shelterbelts because winds come from all directions.

WBECON predicts varying yield changes over several different areas of the field and calculates an average change for each crop in a rotation over the whole 160 acre field. It then determines the economic benefits of those yield changes over the life of the shelterbelt system using shelterbelt costs chosen by the programand economic information entered by the user. This information includes per acre crop production costs, per acre unsheltered yields and per unit selling prices based on the user's experience.

The future benefits are calculated using today's input and output prices (constant dollars). They then are discounted to a present value, which is the value they have for the farmer today.

One final question that farmers might ask is: "Does WBECON calculate the value of the reduction in soil erosion provided by shelterbelts?"

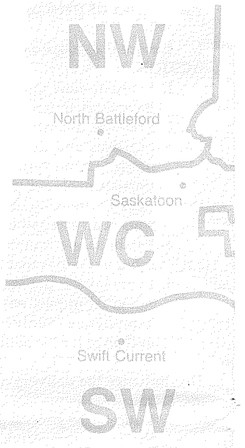
Kort explains: "We didn't include any specific measurement of the economic effects of reduced erosion resulting from shelterbelt planting. However, over the long term, less erosion should be reflected in increased crop yields because soil productivity is maintained."

Well-planned shelterbelts provide economic benefits to farmers. WBECON can help farmers plan well.

WBECON runs on any IBM compatible computer. The program can be ordered by sending a blank formatted disk (3.5 or 5.25 inches) to:

John Kort
PFRA Shelterbelt Centre
Box 940
Indian Head, Sask. S0G 2K0
Phone: 695-2284 Fax: 695-2568

Direct seeding a success



By: Juanita Polegi
E.C. Soil Conservationist

On the district summer tours in the East Central Region, SOS Program cooperators showed other producers how well their direct seeded crops were progressing. These cooperators were pleased with how relatively weed-free the fields were and how they had saved

Reports are coming in of both direct seeded cereals and oilseeds yielding higher than the conventionally seeded crops.

on fuel by not working the land after harvest and/or prior to seeding. The final analysis, of course, would be in the yield.
Now that harvest is complete, direct seeding success stories are being received. Reports are coming in of both direct seeded cereals and oilseeds yielding higher than the conventionally seeded crops.

As interest in direct seeding continues to grow, the districts are planning winter extension meetings that deal with the practice more fully.

Producers are also expressing interest in crop shredders and rotary harrows. Presentations on these pieces of equipment will be given at some future meetings.

Several schools have been visited since school resumed in September. Tours have been arranged for students in two locations. Thanks to Dave Lukash, SOS Technician in District 12 & 13, for his assistance in setting up a tour for Grade 7 students in Melville. Sandra Lowndes, SOS Technician in District 42, was most helpful in arranging a tour for Kelvington's Grade 11 Agriculture class. Unfortunately, due to a blizzard in late October, that tour had to be postponed.

Producers continue to show their interest in planting field shelterbelts. At the time of writing, the PFRA Shelterbelt Centre reports many tree applications have been received from this region.

NOTICE

A Regional Meeting for SSCA members and friends is tentatively scheduled for Thursday, December 5 at the St. Mary's Cultural Centre in Yorkton, 1:00 - 4:00 p.m. Everyone with an interest in the conservation of our soil resource is invited to attend.

Are you a conservation farmer?

Under the Canada-Saskatchewan Agreement on Environmental Sustainability, the Research Branch of Agriculture Canada is conducting a survey of all Saskatchewan farmers who use direct seeding or conservation tillage. The survey will gather information on crop production practices and identify potential benchmark field sites for ongoing research into the agronomy of direct seeding and conservation tillage systems. While individual farmer names and responses will remain confidential, a summarized report on the finding will be published and will be available from Agriculture Canada. Western Resource Management Associates Ltd., an integrated resource management consulting firm based in Yorkton, has been hired to conduct the survey on Agriculture Canada's behalf.

To ensure that the survey results represent current direct seeding and conservation tillage techniques in Saskatchewan Western Resource Management Associates Ltd. asks you to participate in the survey if your crop production practices are similar to one or both of the definitions provided below:

Direct Seeding Seeding spring or fall crops directly into the standing stubble of the previous crop with a minimal amount of soil disturbance. This normally involved seeding with a specialized implement that is equipped with narrow hoe or disc openers followed by individual row packers. Chemical weed control is a necessary part of this system. Other names include no-till, zero tillage, chemical tillage or direct drilling.

Conservation Tillage A system that retains a majority of the previous crop's residue on the soil surface. Examples would include:

- one fall or spring tillage followed by seeding with a hoe press or disc press drill.

- one-pass seeding with an airseeder equipped with shovels or spikes and mounted or pull-behind packers.

Systems that involve additional harrowing and/or packing (prior to or after seeding) do not meet the criteria for direct seeding or conservation tillage.)

Systems that utilize tillage follow do not meet the criteria for direct seeding or conservation tillage. Only chem fallow is acceptable.

To receive a survey package, please phone Western Resource Management Associates Ltd. (collect) at 782-9762.

2nd Annual Soil Conservation Slide Contest

see p. 12

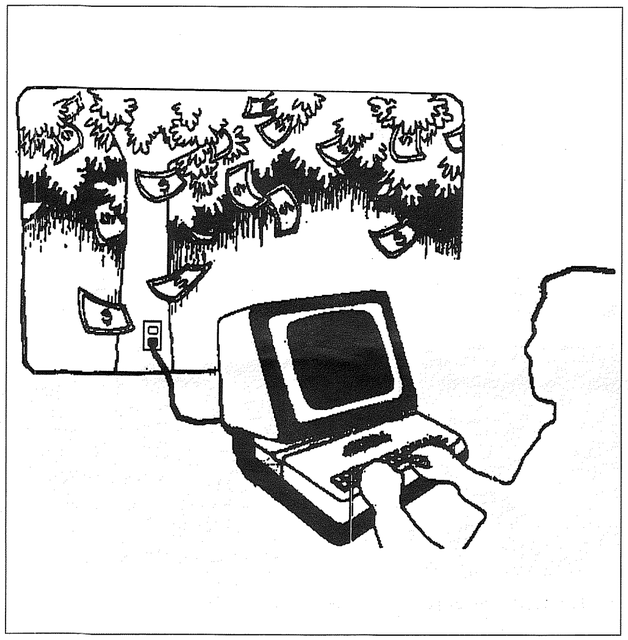
Computer program helps plan profitable shelterbelts

By: James Lokken
SSCA Economist

Saskatchewan farmers can now order a computer program which uses information from their own farms to estimate the economic benefits of field shelterbelts. The PFRA Shelterbelt Centre in Indian Head developed the program in cooperation with the University of Nebraska over the last two years and recently began to send the program to interested farmers.

Shelterbelt owners, extension workers and scientists often have had difficulty placing a dollar figure on the value of field shelterbelts. As a result, many farmers are unaware of the economic advantages of shelterbelts and are reluctant to plant them. The new computer program should help them make more informed decision about shelterbelts. The program calculates expected increases in crop yields, annual economic benefits and total economic benefits attributable to a shelterbelt system over its lifespan. It can be used to plan new shelterbelts or assess the value of existing belts.

John Kort, shelterbelt biologist at the PFRA Shelterbelt Centre, and Dr. James Brandle of the University of Nebraska developed the user-friendly program, named WBECON (for windbreak economics). They made use of shelterbelt performance information collected throughout the Great Plains of the United States and the Prairies of Canada over the last several decades. They also tried to give individual users as much opportunity to provide their own information as possible.



Computer program shows the benefits of field shelterbelts

Kort says " the program allows for an analysis of the yield and economic benefits of windbreaks over a wide range of conditions. We 'initialize', or adjust, it for general conditions on the Canadian Prairies before sending it out the farmers who further adjust it to local conditions such as cropping systems and climate."

The program requests simple climatic, soil, crop rotation and economic information from the user's own farm. The user then chooses a shelterbelt system for a quarter section of land from a series of choices provided by the program. WBECON combines this information with research data on climate, soils, design and species of shelterbelts, costs of growing shelterbelts and the effects of shelterbelts on crop production.

The program provides a one page summary of its assumptions, inputs and results. An example of the summary page is printed on page 8.

The major estimates that the summary provides are:
- the expected net yield increase for each crop in a chosen rotation, attributable to the shelterbelt system (in per cent).
- the average annual economic benefit for each crop in the chosen rotation (in constant dollars).
- the net present value of the overall economic benefits and costs.

All of these estimates are calculated over the lifespan of the shelterbelts.

WBECON basically compares the costs of growing shelterbelts to the crop production benefits given by them. The costs include site establishment, planting and care of the trees, and a removal cost at the end of their lifespan. The program user has the option of adding a cost for renovating shelterbelts as they age. For existing belts, the program calculates costs and benefits starting with the present age of the trees.

continued p. 8

Why push it?

By: Juanita Polegi

When the settlers first arrived in the Parkland region of this province, they found trees and shrubs growing in abundance. In order to create farmland, the settlers were forced to clear large tracts of bushed land. The trees and bushes were removed quickly, thereby exposing the highly fertile prairie soil. With the sowing of the first wheat crop, farming began in the Parkland.

Some folks still believe that all the trees and bushes must be removed from every piece of land that has the potential to be cropped. The Canadian Wheat Board's quota system is sometimes blamed for this need to clear land. However, the excuse most offered for further clearing is related to convenience; a quarter needs to be squared, or the pothole full of willows and poplars is awkward to work around, or the trees are simply considered to be an eyesore on an otherwise level field.

The unfortunate result of this line of thinking is that the clearing of bush is not restricted to farm land. The value of abandoned or undeveloped road allowances is not recognized and they, too, fall victim to the dozer blade. With the destruction of these areas, both the soil and wildlife suffer terrible consequences.

Road allowances play a limited role in soil conservation. The road allowance bush is, all too often, the only bush providing any protection to the soil, as quarter after quarter is left devoid of all other trees. The provincial government is providing funds through the Save Our Soils Program to encourage the planting of field shelterbelts. It just doesn't make sense to clear the few trees and bushes found along road allowances. It's best to leave those trees standing to protect the soil.

Saskatchewan is known for its rich diversity of wildlife. A typical 66 foot allowance could provide eight acres of wildlife habitat. When the trees have been cleared, what happens to the birds and animals that seek food and shelter in the road allowances? What about the saskatoon, chokecherry and pincherry bushes? What about the wildflowers?

Many of the RM Councils in the East Central Region have discussed passing bylaws that will prohibit the indiscriminate clearing of abandoned or undeveloped road allowances. Some have even gone so far as to require landowners to obtain written permission from the Council before clearing can proceed. The time has come for RM Councils across the province to implement bylaws that will protect these areas. Further delay will result only in the destruction of more bush.

Abandoned and undeveloped road allowances are great natural resources. The benefits they provide, while often intangible, are truly valuable. Clearing of these areas is both costly and destructive. If a road allowance in your municipality is not destined for use in the near future, why push it?

Photo contest winners announced:

Before

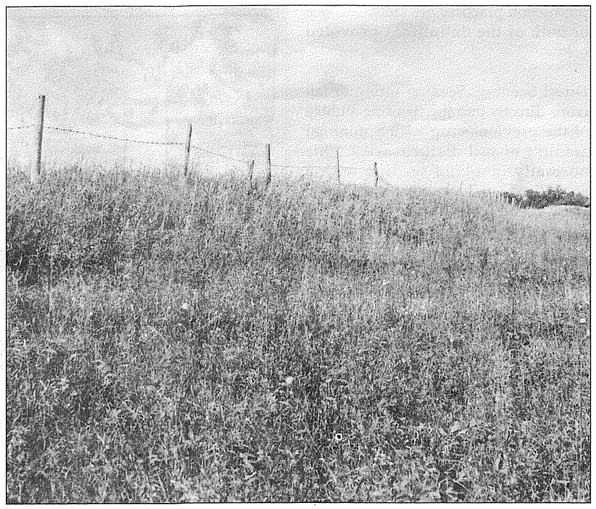
After

1st place winner and $300 goes to Alvin & Janet Popowich of Langenburg. Their "Spring Washout" photos best reflected the contest theme.

The SSCA takes this opportunity to thank all of the people who submitted photos for the contest. Your efforts are greatly appreciated.

Before

After



2nd place and $200 goes to J. W. O'Connell of Regina for "Drifting Soil".

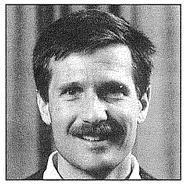
Before

After

3rd place and $100 goes to Mrs. Shirley Tjernstrom of Margo for "Homestead Depletion".

A conservation strategy for sustainable development in Saskatchewan

The Round Table's draft report



By: John Kiss
Executive Manager, SSCA

This fall the Saskatchewan Round Table on the Environment and Economy released its draft Conservation Strategy. It is very evident that the over-riding importance of our soil resources is highlighted in this report. CONSERVATION OF THE SOIL RESOURCE is listed as the 3rd overall Key Recommendation in the report.

As agricultural producers and managers of the land resource, each of the Round Table's recommendations listed in the report, if adopted, will affect you. For the record, here are the Round Table's recommendations regarding the province's soil resource.

Protection of primary resources: soil

I. Ensure that sustainable soil management techniques are adopted.
ACTION:
1. Evaluate new and existing policies and programs, including economic incentives, in terms of their impact on soil conservation.
2. Provide incentives to encourage the adoption of soil conservation practices and the development of conservation planning. This should begin immediately. Programs that unintentionally encourage unsustainable soil practices should be phased out by the year 2000.
3. Restrict breaking, clearing and draining activities that will not maintain soils at an acceptable level of quality.
4. Establish environmental codes of conduct for forestry, agriculture and other industries that have the potential to affect soil quality or availability.
5. Evaluate the potential use of cross compliance in Saskatchewan and it potential impact on the adoption of soil conservation practices. (Cross compliance involves the establishment of farm management plans in exchange for the ability to participate in government programs).

II. Enhance the delivery of soil conservation information.
ACTION:
1. Educate the general public on the value of soil conservation practices and their long-term economic benefits.
2. Improve delivery mechanisms for technology transfer to enable agricultural producers and foresters to implement conservation techniques.

III. Continue to support and promote inter-disciplinary research and development initiatives aimed at soil conservation.
ACTION:
1. Assess rates of soil nutrient depletion and degradation from agricultural and forest soils.
2. Assess the effects of agricultural and other chemical use on soil quality.
3. Conduct research to determine the most effective methods for ensuring the adoption of soil conservation practices.
4. Conduct research to determine the most appropriate methods of rehabilitating degraded agricultural lands.

Ensure the sustainable use of ecosystems and species

I. Governments and agricultural producers must develop a comprehensive strategy to protect and rehabilitate soil resources.
ACTION:
1. Government should immediately evaluate their policies to ensure that they encourage sustainable soil management. Policies that encourage non-sustainable soil management should be eliminated.
2. As part of the qualification process for subsidies, governments should help agricultural producers to incorporate environmentally sustainable practices into their current operations.
3. Marginal lands currently under cultivation should be returned to permanent cover.

II. Governments, in cooperation with pesticide manufacturers and users, must develop a comprehensive pesticide management system.
ACTION:
1. Pesticide applicator training programs should be strengthened for non-commercial users.
2. A comprehensive pesticide monitoring program should be developed for both ground and surface water, and a pesticide information system must be developed to give health and environmental agencies access to types and amounts of pesticide products being used in specific areas.
3. A program should be developed to protect threatened and endangered species from harmful pesticides.

III. Governments and agricultural producers should develop improved integrated pest management programs.

IV. Governments and agricultural producers must develop programs and policies to ensure sustainable use of grazing resources.

ACTION:
1. Management plans should be developed for all Crown grazing lands to ensure sustainable use of grazing resources and to achieve multiple land use.
2. All remaining native rangeland should be managed to maintain Saskatchewan's biological diversity. Damaged areas should be restored to productive rangelands.

V. Governments and agricultural producers must develop multiple land use objectives for Crown agricultural land and Crown resources on private land.
ACTION:
1. Government should develop comprehensive land use plans for agricultural Crown lands, especially those areas which are currently used for multiple purposes.
2. Government agencies and agricultural producers should work together to minimize wildlife damage problems.

VI. Increased research is required to protect and enhance Saskatchewan's agricultural systems.
ACTION:
1. Research is required to:
   i) improve integrated pest management.
   ii) identify crops, cropping systems, and agronomic practices that improve and enhance soil resources while increasing net farm income.
   iii) develop sustainable grazing management practices.
   iv) determine the potential for developing renewable energy resources from agricultural products.

Equipment demonstrations such as this portable sawmill were a major part of the Western Canada Woodlot Exhibition

Cutting trees helps soil conservation?

By: Howard Fox
SSCA Shelterbelt Specialist

Who in their right mind would think that cutting down trees would help conserve soil and wildlife habitat? After all, doesn't that expose the soil to wind and water erosion? Doesn't it destroy wildlife habitat and lead to sedimentation of waterways because of soil being washed off the land?

Well, the answer, as many economists would say, is yes and no!

Yes, all of those undesirable things can happen if the removal of trees is extensive as it was in the past and may still continue to be, in some parts of the province. Clearing natural bluffs on agricultural land with bulldozers and vast clear-cutting of forest lands does expose fragile soil to erosion.

But, if the removal of the trees is planned and selective, as in a well managed woodlot, then the land is still protected by a healthy and vigorous permanent cover.

On October 18 & 19 close to 1000 people attended the first Western Canada Woodlot Exhibition. The Exhibition, which was hosted by The Farm Woodlot Association of Saskatchewan and Forestry Canada, was held at the Frank Sudol farm near Paddockwood.

The Exhibition was targeted for private landowners to make them aware of various opportunities and benefits of managing their woodlots. Small-scale forestry management was featured, including seminars on woodlot management and active demonstrations of harvesting and processing equipment and techniques. Self-guided tours of forest management practices and information displays were also highlighted.

The Exhibition was a great opportunity to find out what woodlot management is all about and how to properly manage private woodlots for profit and long-term sustainability.

DIRECT SEEDING

"Is It The Path To Profit?"

A Conference and Trade Show on Soil Conservation

PRESENTED BY
The Saskatchewan Soil Conservation Association
In Cooperation with Saskatchewan Rural Development / The Prince Albert ADD Board
and The Saskatchewan Agriculture Development Fund

February 10-11, 1992
Exhibition Centre
Prince Albert, Saskatchewan

Key Note Speaker:
Dr. Dwayne Beck, Director
Dakota Lakes Research Farm, South Dakota

Conference Topics:

- Producer Panels on Direct Seeding
- Direct Seeding Equipment
- Economics of Direct Seeding
- Agro Forestry
- Direct Seeding Fertilizer Placement
- Weed Control for Direct Seeding
- Direct Seeding Grasses
- Shelterbelts and Wildlife

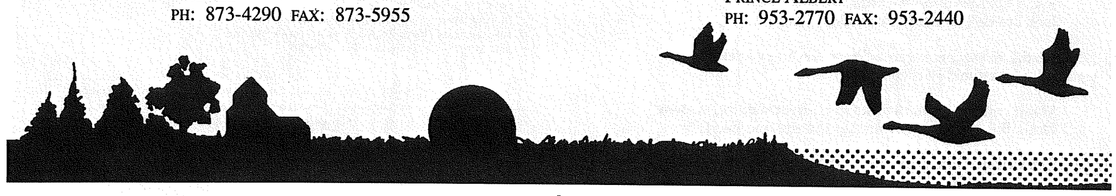
Trade Show Featuring 32 Booths

For More Information, Contact:

Garry Meier
SSCA Regional Soil Conservationist
Tisdale
PH: 873-4290 FAX: 873-5955

OR

Barry Swanson
Extension Agrologist
Prince Albert
PH: 953-2770 FAX: 953-2440



Season's greetings from the SSCA Board Members and Staff. May you all have a pleasant and safe winter

Direct Seeding Conference Feb. 10-11, 1992

Agenda

Day 1 - Monday February 10:

11:00 a.m. **Registration**

1:10 p.m. **Opening remarks**
Terry Pearse, Conference Chairman
Dr. Dwayne Beck

2:00 p.m. **Western Canadian View on Direct Seeding**

Manitoba	Garth Butcher, Shoal Lake
Saskatchewan	Guy Lafond, Indian Head
Peace River	Jack Dobb, Dawson Creek

3:00 p.m. **Coffee in trade show area**

3:30 p.m. **Sask. producer panel on direct seeding**
Garry Meier, Tisdale
David Sefton, Broadview
Lucien LePage, Montmartre
Marcel Conture, Debden

4:30 p.m. **Question period on direct seeding**

5:00 p.m. **Cash bar**

7:00 p.m. **Banquet**
"A TASTE OF SASKATCHEWAN"
Slide Show: SSCA Slide Contest Winners

9:00 p.m. **Social (cash bar)**
Entertainment: The Campbell Family from Prince Albert

Day 2 - Tuesday, February 11

7:30 a.m. **Breakfast in trade show area**

8:30 a.m. **Premier: "Soil Conservation: Video Guide II"**
How to: Direct Seed: Grains and Oilseeds
Conserve Soil and Enhance Wildlife
Seed Forages on Saline and Erodible Lands

9:00 a.m. **SSCA Annual Meeting**

10:00 a.m. **Coffee in trade show area**

10:30 a.m. **Agro Forestry in Saskatchewan**
Speaker TBA, Saskatchewan Farm Woodlot Association

11:00 a.m. **Wildlife, shelterbelts and alternative uses for shelterbelts**
Jim Johnston, Forestry Canada, Prince Albert

11:40 a.m. **Direct seeding forages**
Larry Koturbash, Ducks Unlimited

12:00 noon **Lunch**
SSCA Conservation Awards
Jack Braidek, Western Producer

1:30 p.m. **Fertilizer placement in a direct seeding system**
John Harapiak, Westco Fertilizers

2:15 p.m. **Weed control - What works in a direct seeding system**
Doug Billet, Saskatchewan Agriculture and Food

3:00 p.m. **Economics - The glue that holds the system together**
Roy Button, Saskatchewan Rural Development

3:30 p.m. **Closing Remarks**
Dave Bueckert, SSCA President

Door prize draws *(you must be there to win)*
A) Fly-in fishing trip to Miner Bay Camp, Wollaston Lake, Sask.
B) Gas Barbeque
C) Binoculars

Conference Fees

Single: $35 before Jan. 22, 1992 $40 after Jan. 22, 1992

Day #1 Feb. 10th $10 not including banquet

Day #1 Feb. 10th banquet $15

Day #2 Feb. 11th $15 includes breakfast and lunch

Accommodations

Participants are responsible to make their own hotel reservations. The accommodation rate at the Prince Albert Inn is $46 single plus tax and $51 double plus tax. Reservations must be made before Jan. 10.

Prince Albert Inn
3680 2nd. Ave. West
Prince Albert, Saskatchewan
S6V 5G2
Phone: 922-5000 collect

EROSION CAUSES TO CURES

Announcement and Call for Papers

Erosion: Causes To Cures

Short Course and Conference
November 2 - 4, 1992
Regina, Saskatchewan

The Saskatchewan Branch of the Canadian Water Resources Association, in cooperation with the Soil and Water Conservation Society (Saskatchewan Chapter) and the International Erosion Control Association, is sponsoring a one day short course and two day conference on all aspects of erosion common to the Northern Great Plains and the Boreal Forest.

Abstract for oral papers are invited on the following or other erosion-related topics:

- **erosion processes**
- **land use practices**
- **construction effects**
- **environmental effects**
- **economic implications**
- **erosion prevention and mitigation**
- **policy and regulatory issues**

Authors are invited to submit abstracts of 500 words by January 31, 1992 to:

Russell Boals
Environment Canada
Room 300, Park Plaza
2365 Albert Street
Regina, Saskatchewan
S4P 4K1
Telephone: (306) 780-5338 Fax: (306) 780-5311

For more information contact:
Ray Pentland, Water Resources Consultants Ltd.
106 Hammond Road, Regina, Saskatchewan S4R 3C6
Tel: (306) 949-8228 Fax: (306) 949-8288

SPONSORS
Saskatchewan Branch, Canadian Water Resources Association
Soil and Water Conservation Society (Saskatchewan Chapter)
International Erosion Control Association

Direct Seeding

"Is it the path to profit?"
Exhibition Centre
Prince Albert, Saskatchewan

Mail to:
Direct Seeding Conference
Saskatchewan Soil Conservation Association
132-3085 Albert Street
Regina, Saskatchewan
S4S 0B1

Registration Form: (please print)

Name _____ Address _____

Postal Code _____ Telephone _____ Fax _____

Are you an Agricultural Producer YES _____ NO _____ (check one)

Occupation _____ Agency/Organization _____

The pre--registration fee is $35.00 until Jan. 22, 1992 and $40.00 after dead-line. Special one day fees are also available at th door. Please make cheques payable to Saskatchewan Soil Conservation Inc.

Note: This form is for the conference registration only. Room reservation information is listed above. Cheques should be made payable to: Saskatchewan Soil conservation Association Inc.

Agriculture and The Environment
Public Lecture Series
North Battleford Library

Livestock and the Environment
Dr. C.M. Williams
Dept. of Animal and Poutry Science January 23, 1992

Land and Water Resources: Are They Threatened?
Dr. D. Anderson
Dept. of Soil Science
February 27, 1992 7:30 p.m.

Wildlife and Agriculture
TBA

Economic Analysis of Land Use in Saskatchewan
Dr. A. Guzel
Dept. of Agricultural Economics
March 19, 1992 7:30 p.m.

For more information, call Blair McClinton at 446-7650 in North Battleford.