

The Evolving Native Plant Industry in Saskatchewan*

Nora Stewart and Andy Hammermeister, Native Plant Society of Saskatchewan

When the pioneers began to settle the prairies they might have viewed the task of plowing the land as “reclaiming” by the dictionary definition of “make available for human use by changing natural conditions”. Later, especially after the drought years, reclamation meant getting something to grow, usually introduced grasses. Now, because of appreciation of our prairie plant species, reclamation may mean replacing native with native. This change has created a demand for native seed which in turn has propelled the native plant industry.

The change can be seen in policy development in both government and non-government agencies. Ducks Unlimited Canada started working with native plants in the 1980s as they embarked on reclaiming agricultural land for nesting cover. In 1992 Chris Nykoluk of PFRA was able to get management there to agree that native pasture should be reclaimed with native plants. It is interesting that Saskatchewan Agriculture and Food's Guidelines and Procedures for Developers is entitled “Restoration of Saskatchewan's Agricultural Crown Rangelands. This clearly indicates the desire to return the land to its former state. There are many other examples to support this trend.

A milestone for native plants which has had a major impact on the industry was the formation of the Native Plant Society of Saskatchewan. A meeting to assess the interest in such an organization was held in September 1994 and the first annual meeting of the Society took place in January 1996. The Society, along with the Northwest Saskatchewan Grasslands Association commissioned a study which resulted in the publication in January 1997 of the “Market Assessment of Native Plant Materials in Saskatchewan”. This useful pamphlet acts as a benchmark listing suppliers and buyers of native plant materials as well as issues in the marketplace. Some problems identified include extreme secrecy, lack of knowledge on the part of buyers and unpredictability of the economic conditions in the province. High cost and low availability of seed were the major factors against the use of native species. One source, however, said there was “no need to produce native plant materials because there is an unlimited supply of it in the province”.

Considerable debate goes on as to what is best where native plants are required for a project. The options are cultivars including the standard mix (three wheatgrasses plus green needle grass) which are not always suited to our conditions, wild harvested seed which is often unpredictable, and seed produced in farm plots from wild-harvested material. About six years ago, Ducks Unlimited Canada, along with researchers, primarily at Agriculture Canada stations, started to develop ecovars by selecting plants from

* Presented at the 24th Annual Meeting of the Canadian Land Reclamation Association held jointly with the Saskatchewan Environmental Industry and Managers Association, Saskatoon, Saskatchewan, September 28-30, 1999.

Canadian prairie stock and breeding them to maintain genetic diversity This seed is now in the multiplication stage and may be available to growers in the year 2001. About thirty species are anticipated, including grasses, forbs and shrubs. This will change the industry, allowing many more species to be readily included in seed mixes. It should be noted however, that when our market assessment was done, a total of 22 grasses, 91 forbs and 28 shrub and tree species were listed as being available through Saskatchewan suppliers. Which type of seed is most appropriate will continue to be debated but there's no doubt that the demand for increased diversity will grow as seed becomes more available.

One new venture which will affect the industry in Saskatchewan is the development of the Native Plant Society web site and an associated listing service. The web site (www.npss.sk.ca) is due to be launched next month. The listing service will soon follow including buyers, sellers, experts and many sources of information.. In the last few years many books and even some videos relating to reclamation have come on the market. These include how-to manuals and plant identification books. Having these sources identified should make it easier for those getting started using native plants to gain the knowledge they need. It is hoped that having seed data - amounts of various species available from different growers or harvesters, lab tests if any, maybe even price - accessible on the net may reduce the secrecy identified earlier in the industry It should also make it much easier to link buyers and sellers. At the moment, it is difficult to determine how many producers exist in the province. Only twenty nine were identified in the market assessment published in 1997 but a successful listing service should bring forward many more. it is anticipated that at least in the early stages, the service will be free to members of the Native Plant Society.

The Society, we hope, is, by its many activities, increasing awareness about native plants and the possibilities of the industry. We publish brochures and a quarterly newsletter, have workshops and an annual meeting/conference. Our display has been seen at many functions around the province this year Just having a place that people can call, fax, write or email is helping to disseminate information. Andy had a flood of requests about the methods and costs of stripping native grasses when the lush production of spear grass seed became evident early this summer.

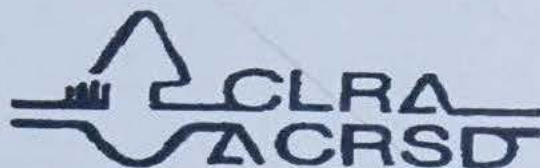
The bonanza versus bust of different years' harvest is a constant concern for the industry. It means that neither availability nor price of seed are predictable. But as the number of producers increases the likelihood of someone having a particular species should rise, and farm-produced seed may be more predictable because irrigation becomes a possibility. It seems likely that more people will be producing natives for a variety of reasons. Although the oil activity will eventually slow, the gas industry in the province should expand, government agencies are likely to encourage more native perennials: for grazing and all wildlife agencies want to increase diversity. Stricter government regulations may bring about greater use of natives. Low maintenance and low water use requirements will mean more use of natives in parks, golf courses and the horticulture industry. Even though more seed will be produced, the price will likely remain high because of these new users.

Assuming that there will be more producers/harvesters and more demand for diversity, supporting facilities and equipment will have to be created. There will be more demand for seed cleaning and lab testing if people are growing small amounts of seed of a large number of species, it's not economical for them to have each tested, so other methods of ensuring a quality product may have to be devised. For example, some organizations of organic growers have their own inspection systems. Another need is for small-scale equipment for harvesting and processing the myriad of seed heads which are found on the wide variety of native grasses, flowers and shrubs.

In January 1997 the native plant industry in Saskatchewan was described as fledgling, immature and exciting. These descriptions are still appropriate but a lot has happened since then and the evolution will likely continue at the same pace.

Perspectives in Land Reclamation and Restoration

Presented by:



Canadian Land Reclamation Association/
Association Canadienne De Réhabilitation Des Sites Dégradés



Including the Canadian Land Reclamation Association's
24th Annual Meeting

This document may be cited as:

Feister, A.M. (compiler), 1999. Perspectives in land reclamation and restoration. 24th meeting of the Canadian Land Reclamation Association held jointly with the Saskatchewan Environmental Industry and Managers Association, Saskatoon, SK. 175pp. 978-0-920597-59-7

Conference Sponsors

Platinum

Department of Indian Affairs and Northern Development

Diamond

Prairie Farm Rehabilitation Administration

Gold

LUSCAR LTD.

COGEMA Resources Inc.

Silver

Aquaphyte Remediation

Bronze

MATRIX SOLUTIONS INC.

Native Plant Society of Saskatchewan Inc.

NORWEST SOIL RESEARCH LTD.

Saskatchewan Environment and Resource Management

Iron

Beulah Tec Ltd.

CAN-AG ENTERPRISES LTD.

Clifton Associates Ltd.

Conor Pacific Environmental Technologies Inc.

Enviro-Test Laboratories

Organizing Sponsor

Alberta Environmental Protection

Nelson Dynes & Associates Inc.

Northern EnviroSearch Ltd.

Red Stone Environmental Inc.

Saskatchewan Wheat Pool

Stantec Consulting Ltd.

Conference Program / Table of Contents

Monday, September 27th

7:00 - 9:00 Registration Booth Open

Tuesday, September 28th

7:15 - 7:45 AM Registration

7:45 - 8:00 AM Bus Loading from Saskatoon Inn Lobby

8:00 AM Field Tour Departure (no delays)

7:00 - 10:00 PM Wine and Cheese, Registration

Wednesday, September 29th

Page #

7:30 Registration

8:00 - 8:05 Introductory Remarks – Saskatchewan Room ‘B’
 Tracy Patterson (CLRA) and Theresa Salamone (SEIMA) n/a

8:05 – 8:25 Opening remarks from Saskatchewan Environment and
 Resource Management n/a

8:25 – 10:05 Saskatchewan Policy – Saskatchewan Room ‘B’
 Session Chair: Lorne Veitch – Saskatchewan Agriculture and
 Food, Lands Branch, Swift Current

8:25 – 8:45 Drilling waste management guidelines.
 Todd Han, Saskatchewan Energy and Mines..... n/a

8:45 – 9:05 Saskatchewan upstream petroleum sites remediation guidelines.
 Todd Han, Saskatchewan Energy and Mines..... n/a

9:05 – 9:25 Surface lease policy and seismic activity on agricultural Crown
 Lands.
 Wilf Pyle, Saskatchewan Agriculture and Food 2

9:25 – 9:45 Lease conditions and restoration criteria on Saskatchewan
 Agriculture and Food Crown Land.
 Todd Jorgenson, Saskatchewan Agriculture and Food 12

9:45 – 10:05 Environmental liability and contaminated site management in
 Saskatchewan.
 Victor Chang, Saskatchewan Environment and Resource
 Management 14

10:05 – 10:30 Refreshments

10:30 – 12:10 Concurrent Sessions

Session A:

Remediation – Saskatchewan Room ‘A’

Session Chair: Darlene Howat – Department of Renewable Resources, University of Alberta

10:30 – 10:50	Bioremedial options. Allan Jobson, StanTec.....	46
10:50 – 11:10	In-situ biodegradation of ethanol-amine in low permeability soils. Stuart Lunn and Ron Goodman, Esso.....	48
11:10 – 11:30	Yield and nutrient uptake of wheat on oil well sites: effects of topsoil depth and organic amendments Akinremi, O.O., Lethbridge Research Centre; F.J. Larney, Semi-Arid Prairie Agriculture Research Station; R.L. Lemke, Semi-Arid Prairie Agriculture Research Station; and V. Klaassen, PanCanadian Petroleum Ltd.....	161
11:30 – 11:50	Investigation of microbial bioremediation in a gold mill tailings pond. Carl Paton, Cameco Corporation and Ram D. Mehta, Prairie Biological Research Ltd.	71
11:50 – 12:10	Use of crop selection and cattle manure to bioremediate a heavy oil-polluted loamy sand for grain production. Bix Biederbeck, Agriculture and Agri-Food Canada.....	82
Session B:		
Revegetation and the ESSA – Saskatchewan Room ‘C’		
Session Chair: Suzanne Gill – Alberta Agriculture, Food, and Rural Development, Public Lands Branch		
10:30 – 10:50	Native prairie revegetation on wellsites in southeastern Alberta. Etienne Soloudre and M. Anne Naeth, and Andy Hammermeister, University of Alberta.....	106
10:50 – 11:10	Vegetation characteristics on a pipeline right-of-way twelve years after construction in Southern Alberta. Kelly Ostermann, University of Alberta.....	109
11:10 – 11:30	Bioengineering and reclamation to stabilize a lakeshore slope. Jim Schaefer, University of Alberta.....	112
11:30 – 11:50	Restoration based on ecological function: grazing management in an endangered Australian ecosystem. Kim Allcock, David Board, David Hik, Alan Newsome, Roger Pech CSIRO Wildlife and Ecology, Australia, and University of Alberta.....	146
11:50 – 12:10	Employment Futures: What does Environmental Science Student Association have to offer? Margaret Wilson, University of Saskatchewan.....	157

12:10 – 1:45 **Lunch** -- Saskatchewan Room 'B'

1:45 – 3:25 **Concurrent Sessions**

Session C: Native Plants and Revegetation – Saskatchewan Room 'A'
Session Chair: Anne Naeth – Department of Renewable
Resources, University of Alberta

1:45 - 2:05 Relative performance of native prairie grasses and forbs for
revegetation of a pipeline disturbance on native prairie.
David Walker, Walker and Associates..... 126

2:05 – 2:25 Revegetation of wellsite disturbances on Fescue Prairie in east-
central Alberta.
Jay Woosaree, Alberta Research Council..... 118

2:25 – 2:45 The evolving native plant industry in Saskatchewan.
Nora Stewart and Andy Hammermeister, Native Plant
Society of Saskatchewan..... 115

2:45 – 3:05 Cameco, Key Lake greening project, in harmony with nature -
(1978-1999 & beyond).
Lotfi Haji, Cameco..... n/a

3:05 – 3:25 Rare Plant Rescue During Pipeline Construction (*Erigeron*
compositus Pursh. var. *glabratus* Macoun, Fern-leaf Fleabane on
the 1998 Foothills Pipe Lines Expansion Project.)
David Walker, Walker and Associates..... n/a

Session D: Soils and Restoration– Saskatchewan Room 'C'
Session Chair: Mike Solohub – Department of Soil Science,
University of Saskatchewan

1:45 - 2:05 Soil information resources for the prairies.
Alvin Anderson and Glenn Padbury, Agriculture and
Agri-Food Canada n/a

2:05 – 2:25 Setting reclamation standards: When is soil decompacted?
Richard Johnson, Alberta Research Council..... 175

2:25 – 2:45 Using oily waste to restore productivity in a severely eroded
loamy sand.
M.C.P. Jarvis^{1,3}, V.O. Biederbeck², K.G. Hanson², T.A.
Fonstad³ ;¹ Imperial Oil Resources, ² Semiarid Prairie
Agricultural Center, and ³, University of Saskatchewan 68

2:45 – 3:05 Remediation of potash slime tails through use of cross-linked
polyacrylamide hydrogel.
Kathleen Cameron, University of Saskatchewan..... 169

3:05 – 3:25 Fifteen years of subsoil/mine spoil development on a

reconstructed profile.

Danielle Bailey and Donald Pluth, University of Alberta..... 174

3:25 – 4:00 Refreshments

4:00 CLRA National Annual General Meeting – Sask. Room ‘C’

5:30 – 6:30 Cocktail Hour – Saskatchewan Room ‘B’

6:30 Banquet and Awards – Saskatchewan Room ‘B’

Awards

Banquet Presentation: New forms of work organization in the Canadian mining industry.

Dr. Bob Russell, Department of Sociology, University of Saskatchewan n/a

Thursday, September 30th

8:10 - 8:15 Announcements

8:15 - 10:00 Alberta Policy – Saskatchewan Room ‘B’
Session Chair: Steven Deugau – Knox Resources Inc.

8:15 - 8:35 Development and status of reclamation certification criteria in Alberta.
Chris Powter, Alberta Environmental Protection..... 18

8:35 - 8:55 Pipeline reclamation certification standards - a capability assessment approach.
Al Fedkenheuer, TransCanada Transmission Ltd..... 24

8:55 - 9:15 Alberta's new native plant guidelines.
Heather Gerling, Alta. Agric. Food and Rural Dev. 31

9:15 - 9:35 Alberta's orphan well program.
Pat Foo, Alberta Energy and Utilities Board 39

9:35 – 9:55 Qualified reclamation practitioners in Alberta.
David Lloyd, Alberta Environmental Protection 40

9:55 – 10:30 Refreshments

10:30 – 12:00 Focus Sessions (Plenary) – Saskatchewan Room ‘B’
Session Chair: Kerby Loewen – Prairie Seeds Inc.

10:30 – 11:15 1)The Great Sandhills
Planning and development authority for Saskatchewan Rural Municipalities and planning districts.
Ralph Leibel, Saskatchewan Municipal Government..... 128

	Use of ecological management planning in Western Saskatchewan Wayne Pepper and Jim Ireland, ERIN Consulting Ltd.	136
11:15 – 12:00	2) Focus Session - Legal Considerations in the Environmental Sector Julian Bodnar, Barrister and Solicitor (Stevenson Gillis Hjelte Tangjerd).....	n/a
	Gary Meschishnick, Barristor and Solicitor Wallace Meschishnick Clackson Zawada	n/a
12:00 – 1:30	Lunch – Saskatchewan Room ‘A’	
1:30 – 3:10	Concurrent Sessions	
Session A:	Remediation – Saskatchewan Room ‘C’ Session Chair: Lisa Groves – EnviroTest Labs	
1:30 – 1:50	Phytoremediation as an in-situ technique for the restoration of oil-contaminated sites. C.M. Frick, J.J. Germida, and R.E. Farrell, University of Saskatchewan	95
1:50 – 2:10	Integration of toxicity testing and chemical analyses for site assessment and remediation. Deib Birkholz, Enviro-Test Laboratories and Stephen Goudey, HydroQual Laboritories Ltd.	98
2:10 – 2:30	Evaluating soil amendments for brine spill remediation. Ken Greer, Western Ag. Consulting and Jeff Schoenau, University of Saskatchewan	n/a
2:30 – 2:50	Decommissioning and reclamation of an abandoned herbicide plant. Ralph Bock, Saskatchewan Environment and Resource Management	n/a
2:50 – 3:10	Surface water management with the Little River Pond Mill. Kathleen Cameron, Sunset Solar Systems Ltd.....	99
Session B:	Ecosystem Restoration – Saskatchewan Room ‘B’ Session Chair: Corinne Tchorzewski – Saskatchewan Environment and Resource Management, Sustainable Land Management Branch	
1:30 – 1:50	Physical restoration of the Kingsmere River in Prince Albert National Park. Michael Fitzsimmons, Prince Albert National Park and Guy Melville, Saskatchewan Research Council	138
1:50 – 2:10	Fire management for Prince Albert National Park - planned and random ignition prescribed burns.	

	Jeff Weir, Prince Albert National Park	141
2:10 – 2:30	Ecosystem management applied to riparian and aquatic habitat restoration. Karl Lauten, Saskatchewan Environment and Resource Management	144
2:30 – 2:50	Working relationship of SERM and industry in the West Boreal EcoRegion of Saskatchewan. Randy Slater, Saskatchewan Environment and Resource Management; Stan McBride, Wascana; and Shawn Daschuk, NESL	n/a
2:50 – 3:10	Composite Tailings (CT) reclamation research & development at Syncrude Canada Limited's oilsands mining operation. Clara Qualizza, Syncrude Canada Ltd.	n/a
3:10 – 3:30	Refreshments	
3:30 - 4:40	Social and Forestry Issues – Plenary – Sask. Room ‘B’ Session Chair: Sheila Lamont – Saskatchewan Conservation Data Centre	
3:30 – 3:50	Ecosystem based management in El Salvador. Jim Ireland and Wayne Pepper, ERIN Consulting Ltd.	154
3:50 – 4:10	Public participation in a multi-stakeholder process. Mark Liskowich, Northern Mines Monitoring Secretariat	156
4:10 – 4:30	Innovative regeneration applications to reclaim harvested sites in the boreal forest. Derek Sidders, Canadian Forest Service.....	n/a
4:30 – 4:40	Closing Remarks – Saskatchewan Room ‘B’	