

Inventory of Programs, Services and Resources

Prepared for the Covering New Ground project:
*Assisting Landowners / managers with Establishing, Implementing and Sustaining
Integrated Pest Management Plans (IPM) for Leafy Spurge*

March 15, 2005



Leafy Spurge Stakeholders Group

The Leafy Spurge Stakeholders Group (LSSG), a broad coalition of agricultural and conservation groups and all three levels of government, was formed in the fall of 1998 to examine the issues and impacts of leafy spurge. The long-term goals of the LSSG are:

1. to design a process whereby an integrated and comprehensive approach to a province-style strategy can be effectively and efficiently implemented. It is hoped that the RDI / LSSG partnership will result in the establishment of a centre of excellence for leafy spurge issues and research in the Province of Manitoba; and
2. to design a strategy or strategies to reduce levels of leafy spurge infestation in those areas of the province most severely affected.

Rural Development Institute, Brandon University

Brandon University established the Rural Development Institute in 1989 as an academic research centre and a leading source of information on issues affecting rural communities in Western Canada and elsewhere.



RDI functions as a not-for-profit research and development organization designed to promote, facilitate, coordinate, initiate and conduct multi-disciplinary academic and applied research on rural issues. The Institute provides an interface between academic research efforts and the community by acting as a conduit of rural research information and by facilitating community involvement in rural development. RDI projects are characterized by cooperative and collaborative efforts of multi-stakeholders.

The Institute has diverse research affiliations, and multiple community and government linkages related to its rural development mandate. RDI disseminates information to a variety of constituents and stakeholders and makes research information and results widely available to the public either in printed form or by means of public lectures, seminars, workshops and conferences.

For more information, please visit www.brandonu.ca/rdi.

Inventory of Programs, Services and Resources

Prepared for the Covering New Ground project:
*Assisting Landowners / managers with Establishing, Implementing and
Sustaining Integrated Pest Management Plans (IPM) for Leafy Spurge*

March 15, 2005

Submitted to:

Kim Wolfe
Covering New Ground Coordinator
Manitoba Agriculture, Food and Rural Initiatives
63-3rd Avenue NE
Carman, MB R0G 0J0
Ph (204) 745-5615
Fax (204) 745-5690
Email kwolfe@gov.mb.ca

David Hay, P.Ag.
Soil and Water Management Specialist
Manitoba Agriculture, Food and Rural Initiatives
Box 100
Shoal Lake, MB R0J 1Z0
Ph (204) 759-4050
Fax (204) 759-4069
Email dhay@gov.mb.ca

Prepared by:

Ryan Gibson

Submitted by:

Rural Development Institute
Brandon University
Brandon, MB R7A 6A9
Ph (204) 571-8515
Fax (204) 725-0364
Email rdi@brandonu.ca

Table of Contents

Acknowledgements	i
Overview.....	1
Programs & Services	2
Federal Level.....	3
Provincial Level	12
Local/Municipal Level	18
Information & Resources	21
Literature.....	22
<i>Manitoba & Canada</i>	22
<i>International</i>	23
Websites & Online Resources	24

Acknowledgements

We would like to acknowledge the individuals who participated in key informant interviews for providing much of the information contained within this inventory. As well, we thank those individuals who reviewed the document and provided suggestions for the inclusion of additional material.

We gratefully acknowledge the financial support received from the Covering New Ground program, a Manitoba Agricultural Sustainability Initiative, of Manitoba Agriculture, Food and Rural Initiatives.



Overview

As there are few programs/services that are designed specifically for controlling leafy spurge, it is often difficult and time consuming to find relevant programs or resources. This inventory of programs, services and resources is part of the project, *Assisting Landowners / managers with Establishing, Implementing and Sustaining Integrated Pest Management Plans (IPM) for Leafy Spurge*. It is designed to aid producers, landowners, land managers, municipalities and other organizations concerned with the control of leafy spurge. An illustrative list of programs/services and websites, it serves as a starting point for anyone wishing to access information and resources for controlling leafy spurge

The inventory consists of two components: programs/services, information and resources. The programs/services component details programs available to producers, landowners/managers, commodity groups or other organizations at either the federal, provincial or local/municipal level. A brief discussion of each program/service consists of the target audience for the program/service, the priorities and/or objectives, information regarding funding and contact information. The information and resources component consists of reports and significant literature, websites and other material relating to leafy spurge. When available, hyperlinks have been provided.

Information regarding the programs/services contained within this report was collected through two main methods. First, a series of interviews with key stakeholders were conducted. Second, a general search of the Internet for programs and resources available to support leafy spurge initiatives was performed. Through these two methods, an inventory of over 25 programs/services applicable to leafy spurge was accumulated.

The inventory is a work in progress, and it is anticipated that it will be maintained and updated on a regular basis. If you know of programs or resources that should be included, please contact the Leafy Spurge Stakeholders Group (LSSG) coordinator at 204-571-8551 or peers@brandonu.ca.

Programs & Services

Programs and services have been divided by federal, provincial and local/municipal levels and contain the following detail:

1. Program/service name
2. Who qualifies for the program/service
3. Priorities of the program/service
4. Funding information
5. Contact information

Federal Level

Within the category of federal level programs, there are eleven programs/services. These programs/services are offered through Agriculture and Agri-Food Canada, Environment Canada, Prairie Farm Rehabilitation Administration and Canadian Pacific Rail.

Program/ Service Name	Who Qualifies	Priorities of Program/Service	Funding Information	Contact Information
Pesticide Risk Reduction and Minor Use Programs (Agriculture and Agri-Food Canada)	Producers and groups	<ul style="list-style-type: none"> ▪ Research and development of new tools for integrated pest management (IPM) development, implementation and assessment ▪ Discovery, research and development of microbial and biological control agents as alternative reduced risk pest-control alternatives ▪ Assessment of adoption, efficacy, economics and environmental impacts of pest control practices and IPM programs ▪ Implementation of biological control agents for integration into new or existing IPM programs ▪ Evaluation of existing decision support systems under Canadian growing conditions, for major commodity-specific crop-pest complexes 	Contact Pesticide Risk Reduction and Minor Use Program, or visit the website.	Leslie Cass (613) 694-2438 cassla@agr.gc.ca www.agr.gc.ca/env/index_e.php?section=pest&page=rrra
Advancing Canadian Agriculture and Agri-Food	All areas of the agricultural industry including commercial and non-profit	To fund innovative projects aimed at finding new solutions to emerging challenges, advancing research to capture market opportunities, and sharing information to advance the	Will fund 1/3 of total project costs up to a maximum of \$100,000. Priority is given to projects in	Manitoba Rural Adaptation Council (204) 982-4790 www.mrac.ca mracinfo@mrac.ca

Program/ Service Name	Who Qualifies	Priorities of Program/Service	Funding Information	Contact Information
(administered by Manitoba Rural Adaptation Council)	organizations, corporations, cooperatives, marketing boards, institutions, associations, commodity groups, as well as private individuals.	sector. Objectives of Advancing Canadian Agriculture and Agri-Food (ACAAF) that must be met: <ul style="list-style-type: none"> ▪ Expand the sector's capacity to respond to current and emerging issues. ▪ Position the sector to capture market opportunities. ▪ Actively and continuously engage the sector to contribute to future agriculture and agri-food policy directions. ▪ Integrate sector-led projects tested and piloted under ACAAf into future government or industry initiatives 	which industry partnerships have been formed and which are not eligible for funding through other government programs. The applicant and/or partners must pay at least one third of the total project cost in cash.	
Co-operative Development Initiative (Agriculture and Agri-Food Canada)	Individuals, groups or communities	The innovation and research component of the program is open to individuals, groups and communities who wish to demonstrate and study innovative uses of the co-operative model. Eligible applicants include individual co-operatives, co-operative associations and federations, community economic development	The expected funding range for individual projects is between \$5,000 and \$75,000 per year. Multi-year projects of up to five years may receive funding, but must	Alain Roy (613) 759-7197 royalai@agr.gc.ca www.agr.gc.ca/progser/cdi_e.phtml

Program/ Service Name	Who Qualifies	Priorities of Program/Service	Funding Information	Contact Information
		groups, Aboriginal communities, social development groups, and research and learning institutes engaged in co-operative research. The Advisory Services component provides expert assistance to groups who want to start new co-operatives, or who require assistance managing existing ones. This component is managed jointly by the Canadian Co-operative Association and the Conseil canadien de la coopération. Advisory Services are available to new and existing co-operatives and groups wishing to start a co-operative.	be completed by the time the program ends on 31 March 2008. Applicants or their partners in the community are expected to contribute at least 25% of the total project costs.	
Establishment of Bio-Control (Canadian Pacific Railway)	Communities situated along the Canadian Pacific Rail line.	Canadian Pacific Railway will work with communities along the rail line in their efforts to control leafy spurge.	Contact Canadian Pacific Railway or visit their website.	Canadian Pacific Railway 1-800-776-7912 www.cpr.ca
Agri-Food Research Development Initiative (Agriculture and Agri-	Individuals, associations, commodity groups, local organizations, agri-businesses	The Agri-Food Research and Development Initiative (ARDI) is to initiate, encourage, promote and conduct innovative research and development projects that:	Priority will be given to eligible projects that have significant industry involvement through direct or in-kind	www.gov.mb.ca/agriculture/research/ardi/appy.html (204) 746-8186

Program/ Service Name	Who Qualifies	Priorities of Program/Service	Funding Information	Contact Information
Food Canada)	and institutions with project plans that are directly applicable to agriculture and agri-food development and associated research or development in Manitoba.	<ul style="list-style-type: none"> ▪ Benefit the greatest number of agricultural enterprises in the industry, or the industry as a whole, through a demonstrated return on investment, ▪ Facilitate adaptation in the agriculture and agri-food industry through diversification, crop and livestock development, growth in the value-added sector. ▪ Facilitate expansion of the agri-food industry in Manitoba by addressing R&D needs, creating new opportunities or removing constraints, ▪ Demonstrate a probable industry impact within five years of the project's completion, ▪ Exemplify a commitment to the principles of sustainable development, and ▪ Are compatible with Canada's international trade obligations. 	support. The overall target is for ARDI to provide 50% of the funding towards the projects approved under the program.	

Program/ Service Name	Who Qualifies	Priorities of Program/Service	Funding Information	Contact Information
EcoAction Species at Risk (Environment Canada)	Non-profit groups	EcoAction encourages project submissions that will protect, rehabilitate or enhance the natural environment, and build the capacity of communities to sustain these activities into the future.	Projects require matching funds or in-kind support from other sponsors	Species at Risk, Environment Canada www.ec.gc.ca/ecoaction/index_e.htm 1 800 668-6767
Matching Investment Initiatives (Agriculture and Agri- Food Canada)	Contact Matching Investment Initiatives or visit their website.	The Matching Investment Initiative is a way to increase collaborative research activity between the private sector and Agriculture and Agri-Food Canada. Under the Matching Investment Initiatives, the Department can match up to one-for-one industry research and development contributions to collaborative research projects. This helps stretch industry's research dollar and, at the same time, helps ensure that the Department's research priorities accurately reflect the sector's real needs. The initiative, by involving industry research investors directly, also helps speed up the process of transferring new technology to the private sector.	Will match industry dollars contributed for a project. For further information, please visit their website	Matching Investment Initiatives, Agriculture and Agri-Food Canada Lorne Heslop Fax: (613) 759-1478 heslopl@agr.gc.ca http://res2.agr.gc.ca/indust/mii/index_e.htm

Program/Service Name	Who Qualifies	Priorities of Program/Service	Funding Information	Contact Information
Agricultural Policy Fund (Agriculture & Agri-Food Canada)	Producers and landowners	The Agricultural Policy Fund (APF), cost-shared with the provinces, will provide the tools and the choices for producers to strengthen their businesses. It will allow them to meet the demands of consumers in Canada and around the world while responding to increased global competition and keeping up with rapid technological change. The APF has 5 priority areas: food safety and quality, environment, business risk management, renewal, and science and innovation.	Contact Agriculture and Agri-Food Canada, or visit their website.	Agriculture and Agri-Food Canada (613) 759-1000 www.agr.gc.ca/cb/apf/index_e.php
Pesticide Risk Reduction & Minor Use Programs (Agriculture and Agri-Food Canada)	Producers and groups	<ul style="list-style-type: none"> ▪ Research and development of new tools for integrated pest management (IPM) development, implementation and assessment ▪ Discovery, research and development of microbial and biological control agents as alternative reduced risk pest-control alternatives ▪ Assessment of adoption, efficacy, economics and environmental impacts of pest control practices 	Contact Agriculture and Agri-Food Canada, or visit their website.	Leslie Cass (613) 694-2438 cassla@agr.gc.ca www.agr.gc.ca/env/index_e.php?section=pest&page=rrra

Program/ Service Name	Who Qualifies	Priorities of Program/Service	Funding Information	Contact Information
		<p>and IPM programs</p> <ul style="list-style-type: none"> ▪ Implementation of biological control agents for integration into new or existing IPM programs ▪ Evaluation of existing decision support systems under Canadian growing conditions, for major commodity-specific crop-pest complexes 		
Green Cover (Agriculture and Agri-Food Canada)	Producers	<p>To improve your grassland-management practices, protect water quality, reduce greenhouse-gas emissions and enhance biodiversity and wildlife habitat. Four components of the project include:</p> <ul style="list-style-type: none"> ▪ land conversion – converting environmentally sensitive land to perennial cover; ▪ critical areas – managing agricultural land near water; ▪ technical assistance – helping producers adopt beneficial management practices; Watershed Evaluation of beneficial management plans; and 	Contact Agriculture and Agri-Food Canada, or visit their website.	<p>Environment Canada 1-866-844-5620 www.agr.gc.ca/env/greencover-verdir/index_e.phtml</p>

Program/ Service Name	Who Qualifies	Priorities of Program/Service	Funding Information	Contact Information
		<ul style="list-style-type: none"> ▪ shelterbelts – planting trees on agricultural land. 		
Canada-Manitoba Farm Stewardship Program	Producers, landowners, and land managers who have completed an Environmental Farm Plan.	The program is aimed at addressing environmental priorities under the Agricultural Policy Framework. The overall objective of the program is to accelerate the adoption of beneficial management practices (BMP) on Canadian farms. The program provides cost-shared incentives for the implementation of BMP to address on-farm environmental risks.	Maximum incentive available to any one producer over the 5 years will be \$30,000.	Kristin Archibald Prairie Farm Rehabilitation Administration (204) 984-3415 archibaldk@agr.gc.ca

Provincial Level

Nine programs/services are documented at the provincial level. These programs/services are offered by the following organizations: Association of Manitoba Municipalities, Farm Stewardship Association of Manitoba, Manitoba Agriculture Credit Corporation, Manitoba Agriculture, Food and Rural Initiatives, Manitoba Cattle Producers Association, Manitoba Conservation, Manitoba Transportation and Government Services and Manitoba Wildlife Management Areas.

Program/ Service Name	Who Qualifies	Priorities of Program/Service	Funding Information	Contact Information
Covering New Ground (Manitoba Agriculture, Food and Rural Initiatives)	Producer groups or provincial commodity groups	<p>Program funding supports projects that emphasize two major goals:</p> <ul style="list-style-type: none"> ▪ Projects must offer solutions to the challenges of sustainable development with an emphasis on improving the environmental performance of the agricultural industry; ▪ Projects must encourage activities that are built on partnerships, particularly among producers, government and industry. Projects are conceived by local industry stakeholders seeking local solutions or by provincial industry stakeholders seeking sector-wide solutions. <p><i>As of 2005-06, leafy spurge is no longer considered a priority area for this program.</i></p>	Minimum 25% contribution of in-kind or cash from the proponent	Manitoba Agriculture, Food and Rural Initiatives Contact local Agricultural Office www.gov.mb.ca/agriculture/research/covering/

Program/ Service Name	Who Qualifies	Priorities of Program/Service	Funding Information	Contact Information
Sustainable Development and Innovation Fund (Manitoba Agriculture, Food and Rural Initiatives)	Municipal corporations, local governments, including Northern Affairs and First Nation communities, private and non-profit organizations and businesses, educational institutions, youth groups and community associations.	<p>The program objectives are:</p> <ul style="list-style-type: none"> ▪ To support and promote innovation in the environmental and sustainable development industries. ▪ To encourage environmentally sound decisions and actions. ▪ To promote research and demonstration of new initiatives not addressed by existing programs. ▪ To stimulate economic development and diversification that will improve the quality of life, and strengthen community identity, throughout Manitoba. ▪ To demonstrate new approaches to prevent waste and pollution and conserve resources. 	Traditionally \$25,000; however, applications can be made at amounts higher than this but can not exceed \$50,000. See website for details.	Manitoba Conservation Pollution Prevention Branch (204) 945-0146 www.gov.mb.ca/conservation/pollutionprevention/sdif/

Program/ Service Name	Who Qualifies	Priorities of Program/Service	Funding Information	Contact Information
Bulk Chemical Purchasing (Association of Manitoba Municipalities)	Rural municipalities in Manitoba	To purchase various chemicals in bulk so as to provide rural municipalities with a low price.	Contact the Association of Manitoba Municipalities.	Association of Manitoba Municipalities 1910 Saskatchewan Ave. W Portage la Prairie, MB R1N 0P1 (204)856-2365 www.amm.mb.ca
Cost Sharing for Control of Leafy Spurge (Manitoba Agricultural Credit Corporation)	Rural municipalities	The objectives of the program are to cost share with rural municipalities and weed supervisors on the control of leafy spurge on infested properties which Manitoba Agricultural Credit Corporation owns.	Contact Manitoba Agricultural Credit Corporation.	Manitoba Agricultural Credit Corporation Contact local office www.gov.mb.ca/agriculture/macc/

Program/ Service Name	Who Qualifies	Priorities of Program/Service	Funding Information	Contact Information
Research Funding (Manitoba Cattle Producers Association)	Contact the Manitoba Cattle Producers Association for details.	The goal of the program is to provide research funding to projects that are committed towards leafy spurge in Manitoba.	Up to \$5,000 per year.	Manitoba Cattle Producers Association (204) 772-4542 www.gov.mb.ca/agriculture/livestock/beef/mcpa.html
Spray Assistance (Manitoba Wildlife Management Areas)	Weed Supervisors, rural municipalities	The objective of the program is to provide funding for spray used to control leafy spurge in Wildlife Management Areas (WMAs).	Contact Wildlife Management Areas Office.	Manitoba Wildlife Management Areas wildlife@gov.mb.ca www.gov.mb.ca/conservation/wildlife/managing/wma.html
Weed Control Funding (Manitoba Transportation and Government Services)	Rural municipalities and Weed Control Districts	The objective is to have funds designated for weed control.	Contact Manitoba Transportation and Government Services.	Manitoba Transportation and Government Services www.gov.mb.ca/tgs

Program/ Service Name	Who Qualifies	Priorities of Program/Service	Funding Information	Contact Information
Leafy Spurge Control on Crown Lands (Manitoba Agriculture, Food and Rural Initiatives)	Rural municipalities and Weed Control Districts	The goal of the program is to control infestations of leafy spurge on properties under the jurisdiction of Crown Lands.	Contact Manitoba Agriculture, Food and Rural Initiatives	Manitoba Agriculture, Food and Rural Initiatives www.gov.mb.ca/agriculture
Environmental Farm Plan (Farm Stewardship Association of Manitoba)	Producers	To assist producers and groups with the voluntary completion and review of confidential environmental farm plans. Farm plans will consist of identifying environmental assets and risks and developing action plans to mitigate the risks. Working in partnership with Agriculture and Agri-Food Canada and Manitoba Agriculture, Food and Rural Initiatives, the Farm Stewardship Association of Manitoba will adapt its strategies and objectives as required to meet the needs of the industry.	Contact Farm Stewardship Association of Manitoba.	Farm Stewardship Association of Manitoba Wanda McFayden, Executive Director (204) 795-6672 mcfaydenw@agr.gc.ca

Local/Municipal Level

Within the local/municipal level, 3 programs/services are noted. These programs/services are funded by: conservation districts, rural municipalities and weed districts.

Program/ Service Name	Who Qualifies	Priorities of Program/Service	Funding Information	Contact Information
Mixed Species Grazing Pilot Program (Mid- Assiniboine River Conservation District)	Producers	<p>The objectives of the program are to:</p> <ul style="list-style-type: none"> ▪ reduce leafy spurge infestations through the use of rotational grazing and ▪ develop rotational grazing schedules for producers. <p><i>This program was offered in 2004.</i></p>	<p>The conservation district assists producers in determining a rotation schedule as well as financial assistance of infrastructural items, such as fencing.</p>	<p>Mid-Assiniboine River Conservation District Kim Poppel, Manager (204) 752-2163 mgr.marcd@goinet.ca www.marcd.mb.ca</p>
Water Supply Program (Mid- Assiniboine River Conservation District)	Producers and landowners	<p>The objectives of the program are to secure safe water for consumption and to keep livestock off riverbanks. Three components of the program available to producers and landowners include:</p> <ul style="list-style-type: none"> ▪ Off-site watering program, ▪ Water supply development program, and ▪ Rotational grazing program <p><i>This program was offered in 2004.</i></p>	<p>Producers can apply to their local conservation district for financial assistance for fencing and water systems.</p>	<p>Mid-Assiniboine River Conservation District Kim Poppel, Manager (204) 752-2163 mgr.marcd@goinet.ca www.marcd.mb.ca</p>

Program/ Service Name	Who Qualifies	Priorities of Program/Service	Funding Information	Contact Information
Control Programs (Weed Control Districts and Select Rural Municipalities)	Producers, Landowners	Services vary by district and municipality, but may include spray programs, biocontrol, etc. They may also provide information and advice.	Contact the local weed supervisor or municipal office.	Contact the local weed supervisor or municipal office.

Information & Resources

This component has been broken down into two sections: literature and online resources. The literature section provides a synopsis of literature pertaining to leafy spurge research and case studies from both the Canadian and international perspective. Where available, links have been provided for literature that is available online. The online resource section contains a list of organizations and their websites who are concerned with or have useful information pertaining to leafy spurge.

Literature

Manitoba & Canada

Buckingham, D., Foley, T., & Kalmakoff, J. (2000). *Environmental law and the farmer*. Saskatoon, SK: Public Legal Education Association of Saskatchewan. Available at www.plea.org/freepubs/el/environment.htm.

Environment Canada (2003). *Complementary approaches to invasive species management beyond weed acts*. Ottawa, ON: Author. Available at www.cws-scf.ec.gc.ca/publications/inv/27_e.cfm.

Environment Canada (2003). *Options for modification of weed acts for their use in controlling invasive species*. Ottawa, ON: Author. Available at www.cws-scf.ec.gc.ca/publications/inv/25_e.cfm.

Gibson, R., Pachkowski, J., & Peers, B. (2004). *Municipal management plans for controlling leafy spurge*. Brandon, MB: Leafy Spurge Stakeholders Group, Rural Development Institute.

Government of Manitoba. (1968). The noxious weeds act (C.C.S.M. c. N110). Available at <http://web2.gov.mb.ca/laws/statutes/ccsm/n110e.php>.

Larson, D., & Grace, J. (2004). Temporal dynamics of leafy spurge (*Euphorbia esula*) and two species of flea beetles (*Aphthona* spp.) used as biological control agents. *Biological Control*, 29(2), 207-215.

Leafy Spurge Stakeholders Group (1999). *Leafy spurge impact assessment*. Brandon, MB: Leafy Spurge Stakeholders Group, Rural Development Institute. Available at www.brandonu.ca/rdi/lssg.

Leafy Spurge Stakeholders Group (n.d.). *Integrated pest management manual*. Brandon, MB: Leafy Spurge Stakeholders Group, Rural Development Institute. Available at www.brandonu.ca/rdi/lssg.

Pachkowski, J. (2002). *Best practices: Environmental stewardship by a private landowner*. Brandon, MB: Leafy Spurge Stakeholders Group, Rural Development Institute. Available at www.brandonu.ca/rdi/lssg.

Pachkowski, J. (2002). *Biocontrol of leafy spurge in support of species at risk: Year II*. Brandon, MB: Leafy Spurge Stakeholders Group, Rural Development Institute. Available at www.brandonu.ca/rdi/lssg.

Pachkowski, J. (2002). *Increased forage production through bio-control of leafy spurge: 2001 field season report*. Brandon, MB: Leafy Spurge Stakeholders Group, Rural Development Institute. Available at www.brandonu.ca/rdi/lssg.

Pachkowski, J. (2003). *Best practices: Manitoba municipalities and integrated control strategies for leafy spurge*. Brandon, MB: Leafy Spurge Stakeholders Group, Rural Development Institute. Available at www.brandonu.ca/rdi/lssg.

Pachkowski, J. (2003). *Biocontrol for leafy spurge in support of species at risk: Year III*. Brandon, MB: Leafy Spurge Stakeholders Group, Rural Development Institute. Available at www.brandonu.ca/rdi/lssg.

Peers, B., & Gibson, R. (2003). *Leafy Spurge Forum proceedings: A disaster in the making*. Brandon, MB: Leafy Spurge Stakeholders Group, Rural Development Institute. Available at www.brandonu.ca/rdi/lssg.

Saskatchewan Agriculture, Food and Rural Revitalization (2004). *Biological control of weeds on the prairies*. Regina, SK: Author. Available at www.agr.gov.sk.ca.

Saskatchewan Agriculture, Food and Rural Revitalization (2004, February). *Integrated weed management: Making it work on your farm*. Regina, SK: Author. Available at www.agr.gov.sk.ca.

Saskatchewan Agriculture, Food and Rural Revitalization (2005, February). *Biological control of leafy spurge*. Regina, SK: Author. Available at www.agr.gov.sk.ca.

Saskatchewan Agriculture, Food and Rural Revitalization (n.d.). *Preventing the introduction of new weeds*. Regina, SK: Author. Available at www.agr.gov.sk.ca.

Saskatchewan Agriculture, Food and Rural Revitalization (n.d.). *Problem weeds: A cattleman's guide*. Regina, SK: Author. Available at www.agr.gov.sk.ca.

Saskatchewan Watershed Authority (n.d.). *Managing leafy spurge on native grasslands*. Moose Jaw, SK: Author. Available at www.swa.ca.

White, D.J., & Haber, E. (2003). *Invasive plants and their biology, impact and control options*. Ottawa, ON: Environment Canada. Available at www.cws-scf.ec.gc.ca/publications/inv/11_e.cfm.

White, D.J., Haber, E., & Keddy, C. (1993). *Invasive plants of natural habitats*. Ottawa, ON: Canadian Wildlife Services. Available at www.cws-scf.ec.gc.ca/publications/inv/index_e.cfm.

International

Birdsall, J., Quimby, P., Ress, N., Sveicar, T., & Sowell, B. (1997). Image analysis of leafy spurge (*Euphorbia esula*) cover. *Weed Technology*, 11(4), 798-803.

Everitt, J., Anderson, G., Escobar, D., Davis, M., Spencer, N., & Andrascik, R. (1995). Use of remote sensing for detecting and mapping leafy spurge (*Euphorbia esula*). *Weed Technology*, 9(3), 599-609.

Forwood, J., & McCarty, M. (1980). Control of leafy spurge (*Euphorbia esula*) in Nebraska with the spruce hawkmoth (*Hyles euphorbiae*). *Weed Science*, 28(3), 235-240.

Gassmann, A., & Schroeder, D. (1995). The search for effective biological control agents in Europe: History and lessons from leafy spurge (*Euphorbia esula*) and cypress spurge (*Euphorbia cyparissias*). *Biological Control*, 5(3), 466-477.

Hansen, R., Richard, R., Parker, P., & Wendel, L. (1997). Distribution of biological control agents of leafy spurge (*Euphorbia esula* L.) in the United States: 1988-1996. *Biological Control*, 10(2), 129-142.

Lym, R., Messersmith, C., & Zollinger, R. (1998). Leafy spurge: Identification and control. Fargo, ND: North Dakota State University. Available at <http://ndsuext.nodak.edu/extpubs/plantsci/weeds/w765w.htm#ident>.

Lym, R. (1998). The biology and integrated management of leafy spurge (*Euphorbia esula*) on North Dakota rangeland. *Weed Technology*, 12(2), 367-373.

Lym, R., & Tober, D. (1997). Competitive grasses for leafy spurge (*Euphorbia esula*) reduction. *Weed Technology*, 11(4), 787-792.

Lym, R. (1997). History of leafy spurge control in North Dakota. *North Dakota Agricultural Research*, Winter 1997. Available at <http://www.ag.ndsu.nodak.edu/ndagres/winter97/ar10298a.htm#abstract>.

Masters, R., & Nissen, S. (1998). The biology and integrated management of leafy spurge (*Euphorbia esula*) on North Dakota rangeland. *Weed Technology*, 12(2), 381-390.

Websites & Online Resources

Below is a list of organizations and their websites that are concerned with or have useful information pertaining to leafy spurge.

- Agriculture and Agri-Food Canada, www.agr.gc.ca
- Association of Manitoba Municipalities, www.amm.mb.ca
- Canadian Forces Base – Shilo, www.army.dnd.ca/cfb_shilo/
- Canadian Pacific Railway, www.cpr.ca
- Canadian Wildlife Services, www.cws-scf.ec.gc.ca/index_e.cfm
- Critical Wildlife Habitat, www.gov.mb.ca/conservation/wildlife/managing/cwhp.html
- Dow AgroScience (Range and Pasture), www.dowagro.com/ca/range/index.htm
- Ducks Unlimited Canada, www.ducks.ca
- Environment Canada, www.ec.gc.ca
- Habitat Stewardship Program, www.ec.gc.ca/press/2001/011107_b_e.htm
- Keystone Agricultural Producers, www.kap.mb.ca/
- Leafy Spurge Stakeholders Group, www.brandonu.ca/rdi/lssg
- Manitoba Agriculture, Food and Rural Initiatives, www.gov.mb.ca/agriculture
- Manitoba Cattle Producers Association, www.gov.mb.ca/agriculture/livestock/beef/mcpa.html
- Manitoba Conservation District Association, www.mcda.ca
- Manitoba Conservation, www.gov.mb.ca/conservation/
- Manitoba Forage Council, www.mbforagecouncil.mb.ca/
- Manitoba Habitat Heritage Corporation, www.mhhc.mb.ca
- Manitoba Intergovernmental Affairs, www.gov.mb.ca/ia
- Manitoba Sheep Association, <http://www.mbsheep.ca/>

- Manitoba Transportation and Government Services, www.gov.mb.ca/tgs
- Manitoba Weed Supervisors Association, www.gov.mb.ca/agriculture/contact/weeddistricts/
- Mid Assiniboine River Conservation District, www.marcd.mb.ca/
- Native Plant Society of Saskatchewan, www.npss.sk.ca
- Nature Conservancy of Canada, www.natureconservancy.ca
- Parks Canada, www.parks.gc.ca
- Prairie Farm Rehabilitation Administration, www.agr.gc.ca/pfra/
- Rural Development Institute of Brandon University, www.brandonu.ca/rdi
- Saskatchewan Agriculture, Food and Rural Revitalization, www.agr.gov.sk.ca
- Saskatchewan Prairie Conservation Action Plan, www.pcap-sk.org
- Saskatchewan Purple Loosestrife and Invasive Species Project, www.sfn.saskatoon.sk.ca/science/splep/index.html
- Saskatchewan Watershed Authority, www.swa.ca
- United States Department of Agriculture TEAM Leafy Spurge, www.team.ars.usda.gov/
- West Souris River Conservation District, www.wsrcd.com
- Wetkit (Tools for managing wetlands), www.wetkit.net

RDI ADVISORY COMMITTEE

Scott Grills, Chair
Dean of Arts
Brandon University

Peter Reimer
Acting Director
Rural Initiatives, Community Cooperatives
and Regional Development Initiatives
Manitoba Agriculture, Food and Rural Initiatives

Larry Flynn
Regional Manager
Population Health Promotion
Health Canada

Reg Helwer
Shur-Gro Farm Services

Ben Maendel
Jonathon Maendel
Baker Colony

Darell Pack
Senior Policy Advisor
Rural Secretariat

W.J. (Bill) Pugh
Partner & Certified Financial Planner
Meyers Norris Penny

Fran Racher
Associate Professor
School of Health Studies
Brandon University

Doug Ramsey
Associate Professor
Department of Rural Development
Brandon University

Frank Thomas
General Manager
Western Manitoba CIBC

Ray Simms
Regional Operations Manager, North-West
MTS Communications Inc.

Jeff Williams
VP Academic & Research
Brandon University

Dion Wiseman
Associate Professor
Department of Geography
Brandon University

Robert Annis
Director
Rural Development Institute
Brandon University

The role of the RDI Advisory Committee is to provide general advice and direction to the Institute on matters of rural concern. On a semi-annual basis the Committee meets to share information about issues of mutual interest in rural Manitoba and foster linkages with the constituencies they represent.