

## Creating Leafy Spurge Awareness

One of the major components of the *Managing Invasive Species: Leafy Spurge Control* project focuses on creating a broad awareness of leafy spurge: how to identify it and how to control its spread. The awareness campaign was specifically targeted at low to no leafy spurge infestation areas of Manitoba (according to 1999 infestation levels).

A variety of promotional materials such as pens, note pads and magnets are being distributed throughout the summer at Manitoba agricultural fairs that take place in low to no infestation areas, as well as at events such as the Manitoba Conservation Districts Association convention in December 2005 and Ag Days 2006. A Control Your Spurge poster outlines measures to prevent, contain and control leafy spurge. Posters have been distributed to conservation district offices, rural municipal offices and businesses.

Placemats designed around three themes – identifying, preventing and managing leafy spurge – inform the public about what the weed looks like, where it is found, why it is a problem and how individuals can prevent and manage leafy spurge infestations. Laminated placemats are being distributed to restaurants.

To promote the awareness of leafy spurge control mechanisms, Laine Mosset and April

Peers organized a leafy spurge awareness tour that focused on biocontrol on July 26. (Please see the article on page 5).

Mosset and Peers designed a leafy spurge board game, word search and illustration to inform youth on the severity of leafy spurge and to educate more adults through these children's voices. The Brandon Riverbank Discovery Centre's Interpretive Programmer, Brad Wall, is including leafy spurge awareness in his educational program. Wall estimates that over the course of the summer, he will have instructed 1,100 children on how to identify leafy spurge and prevent it from spreading.



### Leafy Spurge Stakeholders Group

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## New on the Web

Check out the Leafy Spurge website for these three new documents:

**Leafy Spurge Control ~ A Best Practice: Cameron, Glenwood, Sifton Weed Control District** captures the operations of a weed district that has demonstrated successful leafy spurge control and containment practices.

**Inventory of Programs, Services and Resources** illustrates the 25 programs applicable to leafy spurge control available in the Province of Manitoba.

**A Framework of Priority Information Needs: Interviews with Key Informants** summarizes key informants' perceptions of the current state of the leafy spurge infestation, effectiveness of existing leafy spurge programs, information and resources, as well as current control methods.

Also available are awareness materials including:

**Placemats (series of 3): Identifying, Preventing and Managing Leafy Spurge**

**Poster: Control Your Spurge**

[www.brandonu.ca/rdi/leafyspurge.html](http://www.brandonu.ca/rdi/leafyspurge.html)

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# Leafy Spurge in Manitoba



- The newsletter of the Leafy Spurge Stakeholders Group -

## Managing Invasive Species

*Managing Invasive Species: Leafy Spurge Control* is an eighteen month project that aims to enhance control of leafy spurge in Manitoba by increasing awareness, encouraging the adoption of integrated pest management (IPM) plans and establishing nurse/harvest sites in southern Manitoba.

There are five major components, one of which is Awareness and Prevention Strategies. The goal is to create a broad awareness of leafy spurge and provide information on controlling its spread in areas of low to no infestation.

A second component involves working with six landowners/producers in moderate and high infestation areas to assess their leafy spurge infestation and to develop specific site-based IPM plans for control and containment. Under a third component, participating landowners /

producers may also receive assistance for control and management of leafy spurge.

In the fourth component, Biocontrol, the focus is on collecting beetles from North Dakota and distributing them in Manitoba to establish two nurse/harvest sites for future use.

Finally, ongoing monitoring and evaluation will be undertaken to assess the impact and success of program activities. Feedback from project participants and partners will be used to make ongoing improvements to project activities.

Beth Peers, LSSG Coordinator, is managing this project. Two Brandon University students, Laine Mosset and April Peers, conduct fieldwork, attend events to raise awareness of leafy spurge, organize and host a leafy spurge

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### Highlights

*Invasive Species 3 Workshop*

*Producer IPM 5 Planning*

*Invasive Alien 7 Species – A National Strategy*

*Creating Leafy 8 Spurge Awareness*



LSSG

## What Do We Know About Leafy Spurge?

*Assisting Landowners/Managers with Establishing, Implementing and Sustaining Integrated Pest Management (IPM) Plans for Leafy Spurge* provided the LSSG an opportunity to gain valuable information on the perceptions of leafy spurge, leafy spurge practices and resources / programs available to assist with controlling leafy spurge.

The goal of the project was to assist landowners / managers with establishing, implementing and sustaining IPM strategies. The information gathered is generalizable to all weed species and is

particularly relevant to anticipated Agricultural Policy Framework activities such as environmental farm planning.

The project produced three key documents. *Leafy Spurge Control ~ A Best Practice: Cameron, Glenwood, Sifton Weed Control District* captures the operations of a weed district that has demonstrated successful leafy spurge control and containment practices. The best practice document identifies a number of key success factors of the Cameron, Glenwood, Sifton WCD including the employment of a full-time,

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## Managing Invasive Species

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control tour and work with six landowners / producers to develop IPM plans. Pamela McTavish and Ryan Gibson are providing additional assistance.

*Managing Invasive Species: Leafy Spurge Control* is a project of the Rural Development Institute (RDI),

Brandon University and is supported by the Agri-Food Research and Development Initiative (ARDI) of Agriculture and Agri-Food Canada. Manitoba Agriculture, Food and Rural Initiatives provides advice to the project, and member agencies of the LSSG provide expertise and assistance.

## What Do We Know About Leafy Spurge?

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proactive weed supervisor, the acquisition and maintenance of equipment for its programs, Board commitment and District longevity.

*The Inventory of Programs, Services and Resources* provided an opportunity to highlight programs and services that are designed specifically for controlling leafy spurge. Developed to assist producers, landowners, land managers and municipalities, the inventory illustrates the 25 programs applicable to leafy spurge control. The inventory is presented in three sections: federal, provincial and local / municipal. Information is provided on eligibility requirements, program / service priorities, funding assistance and contact information for each of the 25 programs.

*A Framework of Priority Information Needs: Interviews with Key Informants* developed through a number of interviews with key people from non-government agencies, provincial and federal government departments, municipalities, industry and other organizations. The interviews were

designed to gain key informants' perceptions of the current state of the leafy spurge infestation, effectiveness of existing leafy spurge programs, information and resources, as well as current control methods. Findings from these interviews indicated a need for:

- an ongoing, consistent and coordinated effort for dealing with leafy spurge;
- a greater shared responsibility among groups and organizations that deal with or should be dealing with leafy spurge;
- a communications effort with a broader reach;
- a leader or champion; and
- a more regional approach.

This project was supported through the Covering New Ground Program, a Manitoba Agricultural Sustainability Initiative of Manitoba Agriculture, Food and Rural Initiatives. For a copy of any of the above documents, please visit the LSSG website at [www.brandonu.ca/rdi/leafyspurge.html](http://www.brandonu.ca/rdi/leafyspurge.html).



## Invasive Alien Species: A National Strategy

In 2004, An Invasive Alien Species Strategy for Canada was released for public consultation. This plan outlined Canada's strategies to reduce the risks of invasive alien species (IAS).

Thematic working groups undertook the task of creating action plans in three areas: a) aquatic organisms, b) terrestrial plants and plant pests and c) terrestrial animals and animal diseases. This national strategy points to the challenge of dealing effectively with established species such as leafy spurge. The strategy affirms that these types of IAS "require a focus on longer-term management that may include containment, control or eradication."

The national strategy also identifies

some of the issues that became evident during the interviews conducted with key stakeholders in the 2004-05 Covering New Ground (CNG) project (see *What Do We Know About Leafy Spurge?* on page 1). Key informants interviewed for the CNG project noted the need for an "ongoing, consistent and coordinated effort" as a means to deal with the "separate, uncoordinated and nominal efforts" aimed at controlling and managing leafy spurge.

Similarly, the national strategy document refers to the challenge of "scattered and piecemeal" IAS initiatives throughout Canada. The national strategy notes the "need to amalgamate the efforts of federal

departments and agencies with those of provincial governments and other organizations to strengthen Canada's efforts to prevent new invasive alien species' introductions at both federal and regional levels, and enhance Canada's capacity to address those existing invasive alien species most effectively."

The CNG findings and the national strategy prompted the LSSG to discuss the possibility of forming a Manitoba Invasive Plants Council similar to the groups already in place in Alberta and British Columbia (see [www.invasiveplants.ab.ca/council.htm](http://www.invasiveplants.ab.ca/council.htm) and [www.invasiveplantcouncilbc.ca](http://www.invasiveplantcouncilbc.ca)) at its meeting in June 2005. Further discussions are underway.

## GIS & On-line Geospatial Database for Leafy Spurge

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The database uses simple parameters such as GPS and general site descriptions. It also includes information on current biocontrol sites. Michele Ammeter from the Manitoba Weed Supervisors Association helped prepare and field test the survey forms in order to make the gathering of information as user-friendly and efficient as possible.

A number of sources have already contributed data for inclusion in the database. Some of these include several members of the Manitoba Weed Supervisors Association, Garry Bowes from Saskatchewan's Noxious Weed Program, Mae Elsinger from Prairie Farm Rehabilitation Administration and various agricultural representatives from Manitoba Agriculture, Food and Rural Initiatives, Manitoba Hydro and Saskatchewan Agriculture and Food.

The GIS database will also incorporate a Weed Invasion

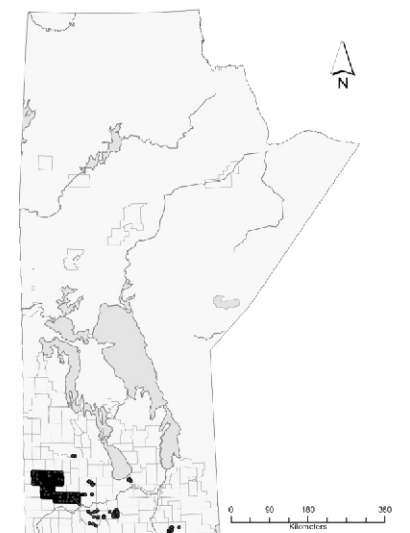
Susceptibility Prediction modeler (WISP) developed by the University of Wyoming. This component adds a predictive element for weed management by determining the susceptibility of an area to infestations based upon a set of pre-determined physiographic characteristics.

Using physical geographic data, the WISP modeler generates susceptibility maps for different units of time (1 year, 2 years, 3 years, etc.). Possible spread predictions are a valuable tool for managers with limited resources, as high-risk infestation can be targeted for rigorous control.

The *Prairie Region Leafy Spurge Project* is funded by the Greencover Canada Technical Assistance Program. If you wish to know more about the project, or would like to provide data and access the GIS database, please contact Karen Rempel, RDI Research Affiliate,

([rempelk@brandonu.ca](mailto:rempelk@brandonu.ca), 204-571-8518) or Alex Martin, RDI Graduate Student Intern ([martina@brandonu.ca](mailto:martina@brandonu.ca), 204-571-8521).

Known Leafy Spurge Infestations in Manitoba



## Prairie Region Leafy Spurge Project

In 2004, RDI of Brandon University received funding from the Greencover Canada Technical Assistance Program for a three-year project aimed at increasing the use of integrated pest management (IPM) strategies to manage leafy spurge across the prairie region of Canada.

The primary goal is to investigate and encourage cooperation and collaboration among and across various groups and organizations in the three prairie provinces. An Inter-Provincial Steering Committee comprised of Paul McCaughey (Brandon Research Station, Agriculture and Agri-Food Canada); Rob Bouchier (Lethbridge Research Station, Agriculture and Agri-Food Canada); Shafeek Ali (Alberta Agriculture, Food and Rural Development); Clark Brenzil (Saskatchewan Agriculture and Food); a representative from Manitoba Agriculture, Food and Rural Initiatives and Karen Rempel (RDI) has been established to help guide the project over the three-year period.

The Steering Committee has identified four major areas of project activities. One is the development of a common database of information on the areas and density of leafy spurge and biocontrol sites across the prairies. The hope is that the database can be used by a number of organizations to help develop management plans as well as coordinate awareness activities.

A second major area of activity is plot and demonstration work using various IPM strategies on biocontrol populations. John and Marge Nicols are the cooperating landowners of the site located near Brandon. In the spring of 2005, Clayton Robins (Brandon Research Station), and Robin Hamilton (Ducks Unlimited) applied various IPM methods such as burning, herbicide application and mowing over the course of the summer. In early July 2005, Jennifer McKinnon and Alex Martin, RDI student research assistants, released spurge beetles on the plots. Preliminary data and observations will

be available in September of 2005; however, final assessment of the impact will not be completed until early 2007.

A third activity of the project is providing on going awareness activities to key groups and organizations across the prairie region such as the Grasslands National Park in southwestern Saskatchewan and the Industrial Vegetative Management Association of Manitoba and Saskatchewan.

The fourth objective of the project is aimed at developing an economic model on increasing the productivity of pastures and hay land through the control of leafy spurge. Components of this activity include an assessment of various IPM strategies provided through this project, as well as a model for the economic analysis of the impact of leafy spurge.

The prairie region is particularly vulnerable to infestation of leafy spurge. Karen Rempel, Research Affiliate of RDI, is coordinating this project.

## GIS & On-line Geospatial Database for Leafy Spurge

One of the components of the *Prairie Region Leafy Spurge Project* is the development of a common geographical information system (GIS) database of information on spurge that will manage, display and analyze geographic information relating to leafy spurge.

GIS has significant potential for the management of noxious weeds. This GIS database has a multitude of applications ranging from simple mapping to determining the effectiveness of biological and integrated pest management control

procedures.

It can also encourage collaboration and coordination across programs and agencies. For example, the database will have a web-based format that will allow stakeholders from across Manitoba, Saskatchewan and Alberta to submit data on a regular basis.

The predictive and analytical capabilities of the geographical positioning systems (GPS) are only as effective as the information stored within the database. Therefore, the information must be current, accurate

and useable.

To build an effective and usable GIS database, RDI developed a working relationship with the new Canada Rural Economy Research Lab (C-RERL) at the College of Agriculture, University of Saskatchewan. Throughout the spring and summer of 2005, Brandon University graduate student Alex Martin and Mike St. Louis of the C-RERL defined the data needs and began the entry of existing and currently available data.

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## LSSG Member Profile

- Mid Assiniboine River Conservation District -

The MARCD was formed in 2002 as a partnership between the RMs of Cornwallis, Elton, Whitehead and the Provincial Department of Water Stewardship. The CD covers an area of over 600 square miles and develops and delivers programming to area residents in the areas of soil and water conservation programming under jurisdiction of the Conservation Districts Act and Water Protection Act.

The MARCD has participated in

many LSSG and RDI projects, including *Managing Invasive Species: Leafy Spurge Control*. Kim Poppel, MARCD Manager, recently attended the Invasive Species Workshop in Bismarck, North Dakota on behalf of the LSSG with Pamela McTavish, a representative of RDI.

For more information on the Mid Assiniboine River Conservation District, visit their website at [www.marcd.mb.ca](http://www.marcd.mb.ca).



## Bismarck Invasive Species Workshop

In April 2005, Kim Poppel (Manager, Mid Assiniboine River Conservation District and LSSG member) and Pamela McTavish attended an Invasive Species Workshop in Bismarck, North Dakota (ND).

"The opportunity to attend these types of workshops is invaluable," stated Poppel. "Learning of new research helps us better focus the activities of the LSSG and provides the opportunity to network with others working hard to deal with invasive species and noxious weeds."

The three-day workshop focused on noxious weeds and invasive species that have ecological impacts on native habitat. The workshop highlighted several keynote speakers, as well as provided an opportunity to attend a number of concurrent sessions.

Portions of the workshop focused

specifically on leafy spurge, covering such topics as fundamental research in the fight against leafy spurge; *Aphthona* population development and leafy spurge growth patterns; and alteration of plant community structure by leafy spurge. Other topics provided insight, including GIS application to Integrated Pest Management, habitat invasibility and noxious weed inventory and mapping.

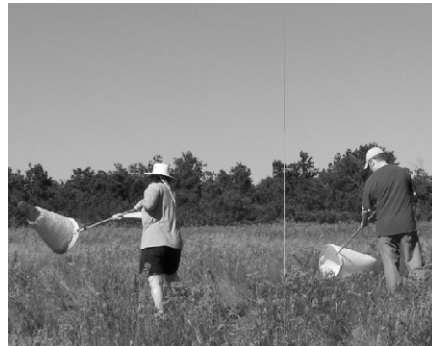
One of the keynote speakers, Ken Higgins, spoke of his efforts as a private landowner on improving control efforts for leafy spurge and other noxious weeds. During his presentation, Higgins proposed a new type of information sharing and treatment alert system that would use media, such as television, to advertise when is the best time to treat noxious weeds. The proposal notes the need to tie treatment in with other activities; for example, "the lilacs are blooming..."

time to spray for leafy spurge."

The workshop was sponsored by a number of partners including the ND Department of Agriculture, ND Game and Fish, U.S. Fish and Wildlife Service, ND Parks and Recreation, U.S. Forest Service, ND Weed Control Association and the ND Chapter of the Wildlife Society.

The workshop agenda and abstracts can be found at [www.agdepartment.com/noxiousweeds/](http://www.agdepartment.com/noxiousweeds/). This link also includes a web-based invasive plant manual that includes invasive plant identification, control measures, contact and reporting information and a number of informative links.

## Biocontrol Collection Trip



An integral component of the *Managing Invasive Species: Leafy Spurge Control* project is biocontrol. "We are pleased that the establishment of flea beetle nurse sites is a significant activity of our project," stated Beth Peers, project manager. "We are anticipating that this population of beetles can be used as a much needed starting point for future collection and distribution within Manitoba."

In mid-July 2005, three members of the project team traveled to Minot, ND to collect leafy spurge beetles (genus *Aphthona*). In usual weather conditions, leafy spurge beetles are collected in late June to early July, but wet weather delayed an earlier collection.

Since the early 1990s, Ward County (which surrounds the city of Minot) has developed intensive biocontrol

programs for the control of leafy spurge. Administered by the local weed board, Ward County has numerous nurse sites that consist primarily of *Aphthona lacertosa*. During the late 1990s the annual number of beetles that were harvested from Ward County exceeded 20 million per year.

Ward County Weed Supervisor, Derrill Fick, directed the team to several harvest sites. The team then returned to Manitoba to release the beetles. The majority of beetles were released for the establishment of two nurse sites in southern Manitoba from where it is hoped Manitobans can harvest beetles. Beetles were also distributed to participating project landowners / producers to assist with their integrated pest management (IPM) plans.



## How to Collect Leafy Spurge Beetles

Collecting *Aphthona* beetles is by no means difficult. However, finding a viable site with a population large enough to harvest can be problematic. Beetles need to be collected and dispersed prior to the beetles laying eggs, which usually occurs in mid to late July.

The equipment required includes a sweep net, paper cups with lids to transport the beetles, cooler(s), ice, sorting device and a film canister. Once the beetles are collected, it is recommended that the beetles be dispersed as soon as possible from the time of their collection. Beetles can survive for 48 hours when placed on ice in a cooler.

Basic directions for beetle collection include:

- Collect on a dry sunny day with calm winds.
- Use a strong stroke with the sweep net in a rhythmic fashion of step, sweep.
- Sweep through the tops of plants (beetles climb the plants when it is hot and sunny).
- Sweep to find where the concentrations of beetles are (sometimes on the edge of patches or in draws).
- Empty the net into a pillowcase. Keep the pillowcase closed. The beetles are very active and will not stay confined for long.
- Empty the pillowcase into a sorting device.
- Sort beetles using the sorting device.

paper storage containers.

- Measure the beetles using a small film canister. The canister contains 3000-4000 beetles.
- Empty the canister into the paper storage container.
- Mark the container with the number of beetles enclosed, duct tape the lids shut and store in coolers with ice. Do not set the containers directly on the ice. This is especially important if the beetles are transported a long distance. Placing newsprint on top of the ice will prevent the containers from getting wet.

## Leafy Spurge Awareness Tour

Excellent weather and a great turnout made this summer's leafy spurge biocontrol tour a success. Eighteen people met at Carberry at 10:00 am on July 26, 2005 to spend the day with Laine Mosset and April Peers, student research assistants, learning about biocontrol.

Weed supervisors, conservation district managers, landowners / producers, students and government workers participated in the tour. Although the tour was presented to a diverse audience, everyone in attendance had one common interest, learning how to effectively manage leafy spurge. After handing out information packages, Mosset made introductions and then the group drove to Spruce Woods Provincial Park.

At Spruce Woods Provincial Park, Gerry Rosset, Natural Resource Officer, showed the group three distinct sites and spoke about the Park's biocontrol efforts. It was evident that flea beetles are having a great impact on the leafy spurge in Spruce Woods based on the photographs that were taken before and after beetles were released. The overall spurge density has been reduced over the past few years.

## Six Producers Battle Leafy Spurge

Do you have a leafy spurge problem? Are you willing to work with a summer student on a project regarding your spurge problem? We found six landowners/producers who did!

Laine Mosset and April Peers, student research assistants, spent a large part of their 2005 summer working with producers on IPM planning, the second component of the *Managing Invasive Species: Leafy Spurge Control* project. Once three

One site was situated beside the Park office where Rosset had set up a beetle collection display. A beetle-collecting device that could be hooked up behind a quad, along with a beetle collection net and flea beetle separator, made up this exhibit. It explained how the beetles were sorted, stored, transported and released.

After lunch the group visited the Victoria Grazing Association site located approximately 40 kilometres north of Holland. Peers explained how the Victoria Grazing Association had travelled to North Dakota to collect beetles for a number of years and deposited beetles in many sites on Association member properties. Tour participants were shown the halo effect in the pasture, evidence that suggests biocontrol is working.

Mosset set up a transect display and discussed the protocol for releasing and monitoring beetles. She described how to count and record heights of flowering and non-flowering leafy spurge plants, as well as to take note of area descriptions (e.g., topography, shade, current land use).

Aside from demonstrating the vegetation sample and flea beetle monitoring forms, Mosset also

discussed the importance of taking photographs on an annual basis to track changes in the overall density of leafy spurge. A short lesson on how to use a GPS unit along with discussion on the importance of GPS readings concluded the presentation.

Before heading back to Carberry, participants completed tour evaluation forms. Comments about what was liked best about the tour included "the sharing of information between participants" and "seeing some of the success stories in insect controls."

