

**A Framework of Priority Information Needs:
Interviews with Key Informants**

A report of 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.

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Introduction

Leafy spurge (*Euphorbia esula* L.) is an invasive noxious weed that came to North America from eastern Europe. The weed was first reported in Manitoba in 1911 and now infests more than 340,000 acres of land throughout Manitoba.

The Leafy Spurge Stakeholders Group (LSSG), a broad coalition of agricultural and conservation groups, plus all 3 levels of government, was spearheaded in 1998 by the Manitoba Weed Supervisors Association (MWSA) and is coordinated by the Rural Development Institute (Brandon University). The goals of the LSSG are to increase awareness of leafy spurge, examine the issues and impacts and enhance coordination among stakeholder agencies.

The research project entitled *Assisting Landowners/managers with Establishing, Implementing and Sustaining Integrated Pest Management Plans (IPM) for Leafy Spurge* provided the LSSG with an opportunity to speak with key people from non-government agencies, provincial and federal government departments, municipalities, industry and other organizations to gain their 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. The results from these interviews are reported in this document, and it is anticipated they will help guide the LSSG's future programming and communications efforts.

The Interview Process

The key informant interview process was initiated in August 2004 with a meeting of the LSSG Steering Committee. A list of organizations to be included in the interviews was drafted, as well as a general outline of the information desired by the LSSG. Individuals identified as potential key informants for the interview process were selected based upon their involvement with, and knowledge of, land management strategies and leafy spurge. The key informant guide and list of contacts was revised in consultation with the LSSG Research Committee and Manitoba Agriculture, Food and Rural Initiatives (MAFRI) staff during September and October 2004.

As the interview process entailed research involving humans, application to the Brandon University Research and Ethics Committee (BUREC) was made successfully in September 2004. The BUREC application dealt with issues related to informed consent, data collection, handling and retention of data and confidentiality. Key informants were assured that the information they provided during interviews would be kept in confidence and that their identities would not be revealed in any subsequent presentation or publication arising from the project. Key informants were made aware that their organization would be acknowledged as part of the study group and that all information collected would be presented in aggregate form or in a format where organizations and/or names would not be attributed to data. Participants were also informed that the results of this research would be made available to the project partners and funding agency, as well as the general public.

Interviews were started in October and completed at the end of November 2004. A total of 34 key informants participated, including key informants representing non-government organizations (NGOs), provincial and federal government organizations/departments,

municipalities and other groups (see Appendix A). Thirty-three of the key informant interviews were conducted via the telephone, while one was conducted in person at the request of the interviewee. On average it took 30 minutes to complete each interview.

Table 1: Key informants by organization type

Type of organization	Number of key informants
NGOs	16
Provincial	6
Federal	6
Other	4
Municipal	2

The key informant interview guide was designed to allow interviewer flexibility in the questions asked of each participant. The opening questions queried key informants as to whether they currently offered information, programs and/or services that deal with noxious weeds, and also if they deal with leafy spurge specifically. These opening questions allowed interviewer(s) to determine with which questions to proceed for each individual key informant.

Approximately 80% (27) of the key informants were able to respond to the majority of the interview questions. These 27 respondents indicated that their organization dealt specifically with leafy spurge. Five of the organizations contacted did not deal with leafy spurge and two dealt with it indirectly. For some key informants, leafy spurge was included in an overall noxious weed strategy or as part of an overall management plan.

Table 2: Do you deal specifically with leafy spurge? (n=34)

Organization Type	Yes	No	Not directly
Federal	4	2	
Municipal	2		
NGO	13	2	1
Provincial	5		
Other	3	1	1
TOTAL	27	5	2

Context: The Fight to Control Leafy Spurge in Manitoba

In 1999, the LSSG conducted an economic impact assessment for leafy spurge in the Province of Manitoba (available at www.brandonu.ca/rdi/lssg/). Data from the study undertaken by the Leafy Spurge Stakeholders Group estimates that the net economic impacts associated with the leafy spurge infestation in Manitoba may be approaching **\$20 million** per year. It is estimated that at least **340,000 acres** are impacted. Without control actions being initiated to limit the growth rate of the infestation, it is possible that the impacted acres (and associated economic impacts) could increase rapidly.

Experts previously believed that “a leafy spurge patch could double in size in 10 years. Now they think it can double in five.”¹ This represents the biological potential to spread, but not necessarily the actual spread.

LSSG, 1999, p. 19

Key informants interviewed for this project report that leafy spurge is continuing to spread in spite of efforts to control it. “There are some areas that are doing a moderately good job but there are areas where we are losing ground. We are seeing an overall increase in acres infested. The problem becomes a question of time and funding and other priorities take precedence.”

Some commented that it is the nature of the weed and how it easily spreads that is probably the biggest challenge to controlling it. Others commented that some landowners and managers seemed either unaware of the problem or exhibited no concern for it. Comments include:

We have made some strides but there is an awful lot out there. Weed control districts say it is growing and not reduced nor under control.

Leafy spurge is spreading. Very few seem to recognize how serious the issue is. People recognize it is spreading along roadways.

The acceptance of the problem by landowners/managers is lacking.

It is a persistent weed that could get out of hand. It can spread into “unused” areas and keep spreading.

Leafy spurge seems to be getting out of control in certain areas. It is hard to control in remote areas (native land).

It is a very persistent weed. It is difficult to kill. One approach does not always work. It is a big problem, widespread and getting worse.

Most key informants (29/34) stated that leafy spurge is not being effectively controlled in Manitoba. Four were not sure. The one key informant who replied yes to the question qualified it by saying it wasn't being very well controlled 7 years ago as compared to now. One key informant said he was very aware of leafy spurge taking over land to the point the infestation affected land value.

Table 3: Is leafy spurge being effectively controlled in Manitoba? (n=34)

Organization Type	Yes	No	Not sure
Federal		5	1
Municipal		2	
NGO		13	3
Provincial		6	
Other	1	3	

¹ Dawson, Allan, “Leafy spurge costs Manitoba \$19 million a year”, The Manitoba Co-operator, Vol. 57, No. 33 March 23, 2000.

Current Control Practices for Leafy Spurge

About half of the key informants indicated they owned land, and, of these, all noted that either they had some type of control program for leafy spurge in place or they currently did not have leafy spurge on their property.

Table 4: Land ownership and control programs

Organization Type	Own land and have a control program	Own land, do not have leafy spurge	Do not own land
Federal	4	1	1
Municipal	2		
NGO	4		12
Provincial	5		1
Other	2	1	1

Of the 17 key informants who employ some kind of leafy spurge control program on their land, seven use a combination of three methods, six utilize a combination of two and 3 use one method only. One key informant knew that a control program was in place, but was not sure what method(s) were employed.

Table 5: Number of control methods employed

Organization Type	One only	Combination of two	Combination of three	Not sure
Federal	1		2	1
Municipal	2			
NGO		1	3	
Provincial		4	1	
Other		1	1	

Herbicide use is widespread. Fifteen of the 17 key informants indicated that chemical was used to control leafy spurge. The next most common control method employed was biological. Just five indicated that they utilize mechanical control methods (including mowing and hand pulling), and three key informants noted that they utilized grazing as part of their control strategy. One key informant was not sure which control methods were utilized.

Research and practice shows that the best approach for the effective control of leafy spurge is the adoption of an Integrated Pest Management (IPM) plan, which uses a combination of mechanical, chemical, grazing and biocontrol methods. Many key informants were supportive of an integrated pest management approach, endorsing a combination of methods.

We support grazing, chemical and biocontrol – try to use everything in the tool box to get the job done.

When you're dealing with a perennial weed, you need a many-pronged approach.

All options have application to some degree. The best application is to apply more than one method in the overall recipe. There is more effective control with IPM than with one application.

Each on its own won't cut it--needs to be a combination approach.

Some organizations have established control programs that bear special mention. One organization responsible for land management began a control program in 1983. The control program includes biocontrol with now over 200 sites within the land managed by the organization, as well as, a chemical program. The biological agent used is the leafy spurge beetle, and beetles collected in North Dakota each year since 2001 have augmented its population in existing sites or to establish new ones. Chemical is also used to spray roadways and boundaries.

Another organization also uses a combination of biocontrol and chemical, but it also uses a mechanical approach in certain areas. The biocontrol sites are monitored, and the organization has made efforts to propagate the spread of other biocontrol agents such as the leaf tier moth and gall fly.

Biocontrol, chemical and grazing controls are used by an organization that works in conjunction with leaseholders, through rural municipalities and/or weed control districts. It also will initiate some efforts on its own. This organization employed students to monitor and move beetles, and they assisted a leaseholder with sheep grazing.

A fourth organization has initiated a mixed-species grazing program with two producers. One large producer has cattle and horses, and a smaller producer has horses only. These producers are assisted financially with items like fencing and water upgrades to include goats in their grazing. The key informant noted that after one year, the program is already seeing results.

A final example is of an organization that performs custom weed control for a provincial department. It manages a biocontrol program on Crown land and private property at no charge. Monitoring usually takes place two years after a release. This organization will apply chemical control on lands owned privately with a nominal fee-for-service. As it is in regular contact with landowners, this organization can respond to needs in a timely fashion, but it does lack the necessary equipment to access remote areas. It also disseminates information about various control techniques to landowners within its jurisdiction.

Many other key informants whose organizations own or manage land stated they cooperate with weed supervisors, rural municipalities and landowners or leaseholders to implement control plans when they didn't have one of their own.

The Findings

In addition to questions about the current state of the leafy spurge infestation in the Province and efforts to control it, a number of questions focused on technology transfer, programs and services, training, human resources, budget allocations and leadership. What interviewers heard from key informants is organized into four themes:

1. Awareness, technology transfer & programs and services
2. Training & resources

3. Funding
4. Coordination & leadership

Awareness, technology transfer & programs and services

Most key informants were aware of leafy spurge; however, there were a number of comments that suggest awareness levels and perceptions surrounding leafy spurge in some areas may need to be improved. Some comments made about the problem of leafy spurge include:

I recently went on a [site] visit and discovered that the problem [of leafy spurge infestation] is rising and spreading.

Leafy spurge is not on the radar screen within our organization. I have been on our technical committee for over 15 years, and it has not come up as something we should be addressing.

From attendance at Weed Supervisors meetings, I see the problem becoming larger. I feel there is an effort, but it is under-funded. It is a persistent and increasing problem, but those who are working on it are doing the best they can with the resources/funding they have. It seems that more was being done in 1996 than now.

A few years ago we talked about it—but recently we have not discussed it much.

There is lots of good work being done regarding education and awareness and also in control measures. We are trying to contain it but don't know if we are.

Landowners and others don't recognize the plant.

There is a lack of understanding about the leafy spurge problem. People don't recognize it on their properties.

Key informants were asked what control methods they were familiar with, as well as, the strengths and weaknesses of each. Although most key informants were aware of the various control methods, many could not comment on each method's strengths and weaknesses. A table of control methods and their strengths and weaknesses as identified by key informants can be found in Appendix B.

Overall, key informants were most familiar with chemical control, grazing and biocontrol. Some commented that they were familiar with mowing as their organization used that method of control. One key informant stated that “for a patch, prevention and containment is by far and away the best approach” for managing leafy spurge.

Some key informants reported they were not familiar with control methods, as they relied on outside expertise such as weed supervisors. Others stated their organization did not endorse any one particular method but did their best to disseminate information to individuals so they could make their own decisions. One key informant was especially supportive of grazing, as the organization dealt with livestock producers who had reduced carrying capacity on pastures due to the leafy spurge infestation. Another respondent supports chemical application and mowing “because of low management efforts and partnering with weed districts.” As well, these methods seem to be most applicable to their sites. Another key informant made the comment that spray was a “familiar” choice for producers and land

managers. Indeed, several key informants stated that chemical application was the best control method to use in their particular situations:

Spray is supported because of historical policy--have always done it so keep doing it.

Techniques--beetle and sheep are environmentally friendly--herbicides have place on small patches.

Used to be in area (biological) but landowners have cropped a lot of this area. Spray used by them because the patches are quite small on roadside--spraying best approach.

Technology transfer activities can include such things as field tours, demonstration plots, publications, the Internet and other methods of sharing information. Twenty-six key informants commented on leafy spurge information and resources that were shared internally within their organizations. About 80% of these key informants indicated that there was at least some sharing of information about leafy spurge within their organization. This leafy spurge information and/or resource sharing includes:

- Sharing of project results/activities (e.g., circulation of written reports)
- Informal updating to program planners and deliverers via email and meetings
- Responding to queries
- Formal reporting at meetings
- Presentations at conferences and meetings
- Sharing of printed materials with program deliverers (frontline staff)

More than half of the key informants who indicated that they engage in some type of internal sharing of leafy spurge information and/or resources noted it was often on an informal basis. Often the sharing of information occurred only when requested by a program deliverer or planner. Comments include:

Our organization has had presentations done at staff conferences and meetings with regards to spurge, however, not regularly.

[Program deliverers and planners] would have to ask to get information about leafy spurge (e.g., via email). I might be only frontline person in our organization working on leafy spurge.

Everyone in our organization keeps up to date on leafy spurge through day-to-day operations. Program planners and deliverers are copied on [organizational] information including hardcopy, brochures and email.

Key informants were asked to describe the information, programs and services their organizations offered with regards to leafy spurge. Key informants noted over twenty-five different communications efforts that can be categorized as follows:

- Demonstration sites and field tours
- Presentations
- Lobbying efforts
- Interpretive programs

- Paper based materials such as fact sheets, brochures and posters supplied by the LSSG, MAFRI and others, as well as articles
- Websites

Some key informants represented organizations with land management plans that included control of leafy spurge. These management plans are disseminated to interested parties as part of their communications effort or technology transfer function. But one key informant noted that more effort needed to go into publicizing what is done to control leafy spurge.

Those key informants who indicated they have programs and/or services not directly designed for leafy spurge said the program and/or service they had was either included in a teaching function or were project-specific (i.e., a brush control project). Key informants mentioned fourteen programs and/or services that deal either directly or indirectly with leafy spurge. Of the programs and/or services mentioned by key informants, almost all dealt with some control method (e.g., biocontrol, chemical application). The programs and services available to assist with tackling the issue of leafy spurge reported by key informants will be included in the inventory that was developed as part of this project. This inventory of programs, services and other resources will be posted on the LSSG Website available at www.brandonu.ca/rdi/lssg/.

Training & resources

Twenty-six key informants responded to a question that asked them to describe training efforts and knowledge levels internal to their organization regarding leafy spurge. About half of these respondents indicated that they know what leafy spurge looks like and, of these key informants, almost all indicated they understood the various control measures employed. A number of key informants did not comment on their knowledge levels with regards to leafy spurge, or noted that only a few within their organization were knowledgeable about control measures. Several indicated that training on leafy spurge would be done through extension or other organizations.

Table 6: Organizations that offer training (n=26)

Type of Organization	Yes	No	Unsure/not yet
Federal	3		1
Municipal	1	1	
NGO	6	6	
Provincial	2	2	1
Other	1	2	

About half of the twenty-six key informants indicated that they offer some kind of training to program deliverers within their organization about leafy spurge. Of those, the most common source of these efforts was the Manitoba Weed Supervisors Association (annual conference/workshops, meetings and one-on-one assistance). Key informants also mentioned hands-on training: taking staff on site tours/field tours, reviewing aerial images and bringing samples of the weed to the office to show staff what it looks like. Other training efforts mentioned include staff attendance at SpurgeFest in the United States and Industrial Vegetation Management Association tours/seminars.

Over half of key informants indicated they have at least part of staff time dedicated to leafy spurge issues. A number of key informants noted that this time might also be spent on other noxious weeds. Staff activities noted by key informants include: chemical application; site monitoring; establishment of biocontrol sites; project management; land management; property inspections; and representation on the LSSG.

Table 7: Percentage of staff dedicated to noxious weeds (n=27)

Type of organization	Part of staff time	No staff	LSSG representative	Project specific	Not sure	Other
Federal	3					1
Municipal	2					
NGO	5	2	2	2		1
Provincial	4	1			1	
Other	3					
TOTAL	17	3	2	2	1	2

*Some percentages include time spent on noxious weeds in general and not necessarily staff time spent specific to leafy spurge.

Twenty-two key informants provided a percentage of staff time spent on leafy spurge. Again, these percentages, in some cases, included time spent on other noxious weeds. Almost half of the key informants indicated that staff time spent on leafy spurge (and/or other noxious weeds) was five percent or less.

Table 8: Staff time spent on noxious weeds (n=22)

Type of Organization	< 1%	1%	5%	10%	15%	33%	Did not say	Project specific	None
Federal	1	1				1			
Municipal		1			1				
NGO		1	2			1	3	1	1
Provincial	2	1	2						
Other			1	1			1		
TOTAL	3	4	5	1	1	2	4	1	1

*Some percentages include time spent on other noxious weeds, not necessarily staff time specific to leafy spurge.

Eighteen of 27 key informants indicated they have some type of interaction with landowners. Some of these key informants disseminate leafy spurge information in the form of fact sheets, web sites, etc. provided by the LSSG or MAFRI to landowners. They also provide landowners with assistance regarding control efforts or direct landowners to the appropriate resources. Thirteen of 21 key informants noted they deal with landowner complaints regarding leafy spurge. Several key informants indicated that they refer landowners to the provincial weed specialist, the local weed supervisor or rural municipality for assistance.

Key informants were asked if they would do anything differently for dealing with leafy spurge if they had access to additional resources such as funding or personnel. Some key informants commented on increasing time and effort on education and lobbying activities.

Others commented specifically on improving control efforts by:

- Being more aggressive with controlling leafy spurge, e.g., burning, grazing
- Setting up more field trials
- Increasing chemical and biological control efforts
- Doing more monitoring of chemical and biological sites
- Increasing the work done on moving beetles around
- Starting goat grazing
- Purchasing a quad to access remote patches of leafy spurge
- Hiring more seasonal staff to assist with work (e.g., monitoring of sites, enforcement of vehicle restrictions)

Some key informants spoke of the need for more and/or improved control options for leafy spurge. Several key informants mentioned the issues of shade-tolerant beetle species and environmental sensitivities for chemical application as challenges to control methods.

Still need more research on the problem and control options. Some source of funding that may allow us to experiment with other biocontrol agents from Europe (something tolerant to shade). Would like to see funding to expand biocontrol.

Biocontrol agents are sensitive to environmental conditions. Need to have better access to beetles. Other agents should be looked at.

It is expensive to bring in new biocontrol agents.... There is a lack of funding to bring more in.

Herbicides that are effective have restricted use on sandy soil.

Interview participants were asked if their organization currently has a policy statement in place to deal with leafy spurge. Of the 27 key informants who responded to this question, 17 had some type of policy, resolution or broad management statement in place. Generally, leafy spurge was included as part of a statement surrounding noxious weeds, environment and/or land management practices. Of these 17 key informants, only four respondents noted that their statement spoke specifically about leafy spurge. The other 10 key informants indicated that they either did not have a policy in place or were unaware whether or not a policy was in place. One key informant asked if the LSSG could assist with the development of a policy statement for his organization.

Table 9: Does your organization currently have a policy statement for leafy spurge? (n=27)

Type of Organization	Specifically leafy spurge	In general	No/Not sure
Federal		3	1
Municipal		1	1
NGO	3	7	2
Provincial		2	4
Other	1		2
TOTAL	4	13	10

Examples of specific policy statements provided by key informants are:

Leafy Spurge Control - RESOLVED, 1. That [our organization] encourage land owners, right of way owners and Rural Municipalities to practice methods to control the Leafy Spurge population and to eliminate spreading of Leafy Spurge, and; 2. That [our organization] lobby the Provincial and Federal Governments to support research and other means to control Leafy Spurge.

[Our organization] understands that exotic species invasions are a threat to the biodiversity of our native ecosystems. In some instances, [our organization] has provided resources to combat the negative affect of exotic invasion (e.g. purple loosestrife, scentless chamomile, toadflax and leafy spurge).

Funding

Several organizations, including the LSSG, as well as, government departments have introduced a number of initiatives aimed at increasing awareness, demonstrating effective control methods and undertaking research on a variety of leafy spurge issues. Funding for these initiatives largely comes from government programs designed to support a specific short-term project and is not designed to provide ongoing, operating support for organizations. Therefore, much of the work that has been done has been conducted in a piecemeal, uncoordinated fashion.

Key informants identified the lack of funding to deal with leafy spurge as a key issue. They reported that funding issues arose on two levels: for coordination of overall efforts on a provincial or regional basis and for individual efforts at maintaining or enhancing control measures.

Funds are limited to research projects.

Those who are working on it are doing the best they can with the resources/funding they have.

More problem than funds to deal with it.

The main challenge is lack of funding.

To tie in with the need for a regional effort that is ongoing, consistent and coordinated, there is a corresponding need for more resources to see that it is done. With a growing leafy spurge infestation in the Province, there is a greater need for adequate resources to help control it.

The leafy spurge problem is “persistent and increasing” but the effort to control it is under-funded.

Over half (17) of the key informants reported that they have a budget for the control of noxious weeds. Nine of those stated they have a budget specifically to deal with leafy spurge, and for 7 key informants, all of their organizations’ weed budgets are dedicated to leafy spurge. Five have no budget at all.

Table 10: Percentage of budget* dedicated to leafy spurge (n=27)

Type of Organization	Part of overall noxious weeds budget	Specific leafy spurge budget	No budget	Project specific budget	Do not know	N/A	Did not respond
Federal	2	1			1		
Municipal		2					
NGO	4	3	3	1		1	
Provincial		2	2		1		1
Other	2	1					

*Some percentages include dollars spent on other noxious weeds, not necessarily specific to leafy spurge.

Three of the 7 organizations that have a budget dedicated to leafy spurge indicated that it was a very small portion of their entire budget. Most spoke of budget limitations affecting their control efforts:

Funding is our issue—may have to turn down community requests for assistance.

Funding levels restrict us from mowing all rights-of-way using our own resources.

The costs of control force some people to give up and not control leafy spurge at all.

Table 11: Percentage of budget dedicated to leafy spurge (n=22)

Type of Organization	>1%	1%	2%	5%	33%	50%	100%	Not sure	Project specific	Budget varies	No budget
Federal	1	1						1			
Municipal		1						1			
NGO	2	2			1	1		1	1		1
Provincial	3		1				1				
Other	1			1						1	
TOTAL	7	4	1	1	1	1	1	3	1	1	1

*Some percentages include dollars spent on other noxious weeds, not necessarily specific to leafy spurge.

Twenty-six key informants responded to a question about whether or not they had future plans with regards to leafy spurge. Almost two thirds of respondents noted that they had some type of plan for the future. Some of the future efforts include the continuation of lobby

efforts, commitment to an on-going project and continuation of current activities. For some, future plans that involved expansion of their current efforts were dependent on funding:

We are not doing everything we'd like due to funding constraints.

Ours is an ongoing plan; we are trying to maintain at least what we are doing now. We hope to expand—depends on funding.

Table 12: Future plans (n=26)

Type of Organization	Yes	No	Not sure
Federal	3	1	
Municipal	2		
NGO	8	3	1
Provincial	2	2	1
Other	2	1	
TOTAL	17	7	2

Coordination & leadership

Several key informants remarked on current efforts of various groups to control leafy spurge. As they report that too many groups are trying to deal with leafy spurge issues on an individual basis and not as a unified body, their efforts are piecemeal and often ineffective.

Rural municipalities, rail, highways and the Province need to control it in right-of-ways so as to complement what producers are doing on their land. A community effort is needed.

There needs to be a joint effort with rural municipalities, producers and the provincial government.

One key informant voiced concern “that if we don’t have strong people keeping the initiative going, [it] may get lost.”

There is a lack of coordination . . . We need a provincial lead with the cooperation of rural municipalities to at least identify where leafy spurge exists and create a plan.

The best approach to the problem of leafy spurge is to share resources and work with others.

Some key informants remarked that they would be willing to participate in a larger regional effort with a broader focus. It was suggested the regional approach should be more of a multi-agency effort, championed by a strong leader. While it was generally presumed regional could mean provincial, or Manitoba, two key informants did indicate it could emerge as a multi-provincial or even national approach.

Several key informants from a variety of organizations indicated their willingness to assist with a regional, coordinated approach to controlling leafy spurge in Manitoba.

This is one of the most serious regional weed issues There is a need for a leader such as the Province. [Our department] would be happy to help with a coordinated

approach. There is a need to fight for a base budget that a regional group could use to deal with leafy spurge on an annual basis.

The problem is too big and responsibility can't be with just one agency. The Provincial government has to decide if they want to give up land to leafy spurge. It crosses department lines, and the business of politics enters into it.

There has to be a concentrated effort right across the Province, from the government down. Two or three of us and a small LSSG is not enough to tackle this problem.

I see a better fit through [a group such as the] Canadian Weed Science Society, as they have more industry representatives than the LSSG.

Some key informants spoke of the need for a lobbying effort:

We would lobby to facilitate the efforts of the weed supervisors and to push leafy spurge as a priority.

If something is identified where the province can help out then head office would become involved through lobbying.

Our organization's role would be to tie it all together—assist with the lobby effort.

Several key informants applauded the efforts of the LSSG and encouraged them to continue and expand efforts against leafy spurge. Another believed that the LSSG should be a formal group with increased accountability and communications.

The LSSG are doing a great job—keep information coming! We encourage LSSG efforts.

We appreciate what the LSSG is doing—keep up the good work.

It is good that the LSSG are trying to keep awareness going.

The LSSG should aim for getting the profile of this issue up regionally. The LSSG could work regionally on IPM involving a broader group of people.

Discussion

Most key informants believe that the leafy spurge problem is growing. Indications are that, without intervention, the impacted acres (and associated economic impacts) could increase rapidly. The persistent invasion of leafy spurge has significant impacts by deflating assessed land values, reducing agricultural productivity and endangering the sensitive balance of prairie ecosystems.

While this is true, it must also be stated that some land managers and landowners are developing and implementing plans to control and contain leafy spurge. Some organizations and individuals develop and implement their own control practices, while others defer to the expertise of and cooperate with weed supervisors and rural municipalities who have had some success in dealing with leafy spurge as well as other noxious weeds. Some of these efforts have been documented previously in this report, as well as profiled in some best practice accounts. Indeed, as part of this overall project, the Cameron, Glenwood, Sifton Weed Control District and its activities in relation to leafy spurge is highlighted in a best practice report (available at www.brandonu.ca/rdi/lssg/).

Still, individuals, agencies and organizations undertake separate, uncoordinated and nominal efforts at controlling and managing leafy spurge. The current practice of reacting to complaints and site-specific weed problems will not be successful in the long term. Based on the interviews with key informants, it is clear that long-term integrated and sustainable strategies to reduce the infestation of leafy spurge will emerge only through greater public participation and understanding, and further dialogue and cooperation among local private, public and nonprofit stakeholders and all levels of government.

Key informants noted 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 that should be dealing with leafy spurge;
- a communications effort with a broader reach;
- a leader or champion; and
- a more regional approach.

Although what is meant by ‘regional’ would need further exploration and discussion, at least two key informants indicated it could involve a multi-provincial or even national approach. One mentioned the existing Canadian Weed Science Society as an example, while another suggested that a Western Canadian Taskforce could be established to deal with leafy spurge.

Some key informants were aware of upcoming legislation and programs that might make it desirable to form a regional group that would have the mandate of all noxious weeds and not just leafy spurge. There is the recently initiated Environmental Farm Plan pilot in Manitoba and the related upcoming Canada-Manitoba Farm Stewardship Program (CMFSP) that deals with Beneficial Management Practices. There is also the Invasive Alien Species initiative that is moving toward a national plan for Canada. Consultations are currently taking place between the accountable federal departments/agencies and the provinces and territories on a discussion document that begins to lay the foundation for a National Plan. An Invasive Plants

Council could strategically respond to the upcoming national program for invasive alien species and potentially secure funding for various activities.

Invasive Plant Councils have been established in Alberta and British Columbia. The Alberta Invasive Plants Council (AIPC) was formally launched November 1, 2004 (Appendix C).

The Invasive Plant Council of BC was established in June 2004 to “work toward the implementation of the [Invasive Plant Strategy for British Columbia] so that through cooperation and coordination, negative ecological, social, and economic impacts caused by invasive plants can be minimized. Invasive plant management requires province-wide cooperation beyond jurisdictional boundaries.” (<http://www.invasiveplantcouncilbc.ca/>). Members include “all orders of government (federal, provincial, local and First Nations), land- and water-based user groups, resource-based businesses and industries, utilities and non-government organizations.”

Five committees of the Invasive Plant Council of BC work toward communications, funding, regulations/legislation, research and technical/inventory. Participants in invasive plant management can show their support for the Invasive Plant Strategy for BC by signing a memorandum of support and thereby endorse the goal and objectives of the Invasive Plant Strategy for British Columbia. “Signatories agree to participate in the Council’s activities and help build a cooperative, province-wide invasive plant management program” (<http://www.bcgrasslands.org/SiteCM/U/D/DB2AE6C0B34FBA6E.pdf>).

The Alberta and BC Councils could serve as models for a similar council in Manitoba. A Manitoba Invasive Plants Council could bring together several levels of government and coordinate action across government departments. Further, invasive plants councils in other provinces and Manitoba may provide opportunities for a multi-provincial consortium that could work on behalf of all provinces involved on those issues for which it makes sense to do so. But establishing such a council in Manitoba is the initial step.

The organization or council charged with coordinating the effort against noxious weeds would require a leader or champion. This leader would facilitate cooperative efforts and work towards addressing jurisdictional issues that pose challenges to effective control efforts. Support for a group like an Invasive Plants Council could cut across these issues both provincially and regionally.

Adequate resources are required to make this effort effective. From the interviews, it is clear that lack of funding is a barrier to action. Key informants spoke of the need for funding on two levels – to implement and maintain adequate control programs and to coordinate efforts across departments and agencies.

Sufficient funding would enable an Invasive Plants Council to conduct a number of activities appropriate to its mandate. These activities could include, but are not restricted to, the following:

- ◆ The coordination and provision of support to stakeholder agencies in order to enhance and promote research activities and knowledge and technology transfer by identifying current and further potential for research and demonstration activities;

- ◆ Consultations with member agencies to assist them in developing integrated leafy spurge control management plans;
- ◆ Ongoing identification of additional funding opportunities;
- ◆ Consultations and lobbying with government departments and agencies and networking with other organizations;
- ◆ Organizing and recording hard data (e.g., GIS/GPS) and encouraging all stakeholders to forward information to be inventoried;
- ◆ Maintaining a communications effort that reached out to a broader, larger audience;
- ◆ Providing tools such as policy templates and sample management plans; and
- ◆ Cooperative weed management.

Perhaps the LSSG could evolve into the type of organization spoken of by key informants, a group that would have a mandate to deal with noxious weeds in general. Whether it is the evolution of the LSSG or a newly formed organization, this group could help to ensure there are positive results arising from a coordinated effort, a greater shared responsibility. This effort must also be ongoing and consistent.

Appendix A

Key Informant Organizations

Type of Organization	Organization, Department
Federal	Agriculture and Agri-Food Canada, PFRA
Federal	Farm Credit Canada, Farm Finance
Federal	Department of Fisheries and Oceans Canada, Habitat Management
Federal	Department of National Defense / CFB Shilo
Federal	Parks Canada, Riding Mountain National Park
Federal	Environment Canada, Canadian Wildlife Service
NGO	Association of Manitoba Municipalities
NGO	A Conservation District
NGO	Ducks Unlimited Canada, Habitat Asset Management
NGO	CropLife Canada
NGO	Nature Conservancy of Canada, Manitoba Region
NGO	Manitoba Habitat Heritage Corporation
NGO	Manitoba Goat Association
NGO	Farm Stewardship Association of Manitoba Inc.
NGO	A Weed Control District member of the Manitoba Weed Supervisors Association
NGO	Manitoba Forage Council Inc.
NGO	Keystone Agricultural Producers
NGO	Industrial Vegetation Management Association of Manitoba/Saskatchewan
NGO	Manitoba Cattle Producers Association
NGO	Manitoba Equine Ranchers Association
NGO	Manitoba Sheep Association
NGO	Manitoba Bison Producers Association
Provincial	Manitoba Agriculture, Food and Rural Initiatives, Policy and Economics Division
Provincial	Manitoba Conservation/Sprucewoods Provincial Park
Provincial	Manitoba Highways, Transportation & Government Services
Provincial	Manitoba Agriculture, Food and Rural Initiatives, Agricultural Crown Lands
Provincial	Manitoba Agricultural Credit Corporation
Provincial	Manitoba Conservation, Wildlife Branch/Wildlife Management Areas
Municipal	RM of Wallace
Municipal	RM of Cornwallis
Other	University of Manitoba, Department of Plant Science
Other	DOW AgroSciences Canada Inc., Range & Pasture
Other	Canadian Pacific Railway, Environmental Services
Other	Manitoba Hydro, Forestry

Appendix B

Awareness of Control Methods: Strengths & weaknesses

Control Method	Strengths	Weaknesses
Biocontrol	<ul style="list-style-type: none"> ▪ Environmentally friendly; beetles become part of the ecosystem without detriment to the environment. Allows native plants to coexist with leafy spurge; an on-site control agent that will adapt to a changing infestation (3) ▪ Low cost (3); low management ▪ Effective; reduces density and vigour of leafy spurge; retards spread; effective in loam soil sites; showy agents and before/after scenarios are great educational tools (10) 	<ul style="list-style-type: none"> ▪ Lack of knowledge ▪ Better access to beetles ▪ Landowner acceptance of results and beetle effectiveness ▪ Lack of availability of agents for shaded areas (2) ▪ Long-term program (13) ▪ Inconsistent results; has to be right site and right beetle; subject to environmental conditions (4) ▪ Challenge (cost) of bringing in other agents;(2) ▪ Requires consistent monitoring (2); takes effort to establish colony, move them around and ensure population stays at a sustainable level ▪ Will never eliminate an infestation of leafy spurge ▪ Concern that biocontrol agents could eat more than leafy spurge
Chemical	<ul style="list-style-type: none"> ▪ Effectiveness (11); on small patches just starting; appears to work quickly; works in accessible areas ▪ Cost effective ▪ Familiar 	<ul style="list-style-type: none"> ▪ Spotty results (6); doesn't kill; short-term band-aid solution ▪ Expensive (9); time and money involved; annual commitment ▪ Keep monitoring (2); be consistent ▪ Restricted use (6); aquifer/water table; sandy soil ▪ Environmental risk and health concerns (4); unknown effects on ecosystem; destruction of other broad leaf, native plants; chemical leeching ▪ Residual problem with adjacent fields when chemical drifts ▪ Does not work in inaccessible areas

Control Method	Strengths	Weaknesses
Grazing	<ul style="list-style-type: none"> ▪ Works without affecting other grazing animals ▪ Environmentally conscientious (2) ▪ Persistence, residual control ▪ Some economic return (2) ▪ Effective (9) if intensively used; goats are even better than sheep; reduces density of spurge; goats can help maintain native prairie where it is feasible. 	<ul style="list-style-type: none"> ▪ Location and accessibility (3) ▪ Labour/time intensive; high degree of management (7) ▪ Learning curve ▪ Long-term ▪ Large number of animals required ▪ Cost factor re: fencing, shepherd (2) ▪ Concern that sheep/goats could graze other vegetation
Mechanical (Mowing, Cultivating, Hand pulling, Fire)	<ul style="list-style-type: none"> ▪ Access to mow and cultivate could be problematic ▪ Easy to manage ▪ Challenge re: management and limitation of land itself (stones, shallow soil) ▪ Environmentally more friendly ▪ Potential to limit flowering and seed production (2); good if you can be consistent ▪ Effective control in cultivated areas ▪ Tillage not very effective (3); in hay fields can get going again ▪ Hand pulling takes time 	<ul style="list-style-type: none"> ▪ Washing equipment; time ▪ Mechanical -- has to be repeated over and over ▪ Application on all sites ▪ Temporary (2); won't eliminate; should be used in combination with others ▪ Timing is important (2) ▪ Not as good a kill rate as chemical but keeps it in check ▪ Could actually spread the seed (2)

Appendix C

Alberta Invasive Plants Council

<http://www.invasiveplants.ab.ca/council.htm>

Who Are We?

The Alberta Invasive Plants Council (AIPC) is comprised of representatives from governments, industry, and grassroots organizations. Its intent is to provide credible information about Alberta's invasive plants and to foster cooperation among stakeholders.

- **Alberta Agriculture, Food & Rural Development** [Shaffeek Ali](#) - Manager, Pest Regulatory Services
- **Parks Canada** [Salman Rasheed](#) - Ecosystem Conservation Specialist
- **Association of Alberta Agricultural Fieldmen** [Kim Nielsen](#) - Clearwater County and [Tim Dietzler](#) - MD of Rocky View
- **Alberta Environment** [Gary Byrtus](#) - Environmental Assurance, Monitoring & Evaluation Branch
- **Landscape Alberta Nursery Trades Association** [Nigel Bowles](#) - Executive Director
- **Alberta Community Development** [Ksenija Vujnovic](#) - Parks & Protected Areas
- **Industrial Vegetation Management Association of Alberta** [Darrell Chambers](#) - Dow AgroSciences
- **Alberta Sustainable Resource Development** [Chris Shank](#) - Fish & Wildlife Division, [Mike Undershultz](#) - Forest Health Section
- **Alberta Native Plant Council**

Funding Partners

- **Dow AgroSciences**
- **Alberta Agriculture, Food & Rural Development**
- **Association of Alberta Agricultural Fieldmen**

Our Goals

Communication – Education - Awareness

Making Albertans aware of the impact invasive plants have the environment, economy & society.

Promote & facilitate partnerships

Foster & facilitate cooperation among invasive plant stakeholders.

Act as a resource organization

Provide expert advice & guidance to government, industry and the public on invasive plant issues.

RDI ADVISORY COMMITTEE

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Director
Rural Development Institute
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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.