



Unwanted Invaders

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Invasive Species Council of Manitoba

c/o 5006 Roblin Blvd. Winnipeg, MB R3R 0G7

Ph: 204-232-6021 Fax: 204-986-7236 Email: info@invasivespeciesmanitoba.com

Invader Alert: Salt Cedar (*Tamarix* spp.)

**By Julie Sveinson Pelc
ISCM Coordinator**

ISCM has received a number of reports that the invasive shrub salt cedar (*Tamarix* spp.) is being sold by nurseries and garden centres throughout Manitoba. It is commonly sold as an ornamental plant under the names "Pink Cascade" and Tamarisk.



Salt cedar (*Tamarix* sp.) shrub in flower.
Photo by: S. Dewey Utah State University, www.bugwood.org

HELP PREVENT THE SPREAD OF SALT CEDAR IN MANITOBA

Although it is not on the Manitoba Noxious Weeds List, salt cedar is known to have the potential to cause serious and irreversible damage to Canada's native ecosystems, economy and society.

It has been identified as an invasive species by the Canadian Food Inspection Agency, named as one of the Nature Conservancy's Dirty Dozen weeds and listed as one of the World Conservation Union's 100 Worst Invaders. Salt cedar is not naturalized in Canada, but present in almost all US States, including North Dakota and Montana.

ISCM encourages Manitobans to think beyond the current legislation by choosing not to purchase, sell or grow this known invasive plant.

Salt cedar was introduced to the western United States from Asia and Africa in the early 1800's as an ornamental plant. It has adapted to tolerate a wide variety of environmental condition and mainly occurs along streambanks, lake shores, irrigation ditches and wetlands.

This aggressive plant requires a massive amount of water to

survive. It crowds out desirable plant species, creates deposits of salt, reduces water tables, drains wetlands and clogs waterways with its extensive root system. It also has a great reproductive capability. Seeds are easily dispersed by wind and water, and severed stems root in moist soil.

Identification

Deciduous shrubs or small trees growing 4.5m (15') in height and form dense thickets.

Bark of young branches is smooth and reddish-brown, becoming furrowed and purplish-brown with age.

Leaves are scale-like, bluish-green, very small and overlap each other along the stem.

Flowers are pink to white with 5 petals. They are dense masses on 2-5cm (3/4-2")

long spikes at the end of its twigs.

Fruit are capsules 3-5cm (1-2") long and split on maturity.

SALT CEDAR IS CAPABLE OF USING 750 LITRES OF WATER PER DAY, GREATLY REDUCING THE AMOUNT OF WATER AVAILABLE FOR OTHER PLANTS.

Please help prevent the spread of salt cedar in Manitoba by choosing alternative vegetation for ornamental plantings.

For more information or to report "Unwanted Invaders", please contact ISCM at (204) 232-6021 or info@invasivespeciesmanitoba.com



Salt cedar (*Tamarix* spp.) invading riparian habitat (top), scale-like leaves (middle) and flowers (bottom).
Photos by: S. Dewey Utah State University, www.bugwood.org

An Ecosystem with a Thorn in its Side; European Buckthorn and Manitoba's Riparian Forests



European Buckthorn (*Rhamnus cathartica*) invading the shrub understory in riparian habitat.
Photo by: James Elmore

**By James Elmore,
European Buckthorn
Technical Assistant,
Manitoba Naturalist Society**

Background

For many years a thorny invader has been staging a silent takeover of Manitoba's Riparian Forests. European Buckthorn (*Rhamnus cathartica*), also known as Common Buckthorn, has certainly set-up for the long haul along Manitoba's streams and rivers. Growing in ever thicker concentrations, it has in many places completely decimated all pre-existing native species. Due to the high densities it is capable of reaching, and the complex interlocking clusters it is capable of forming, European Buckthorn is notorious for being one of the most difficult and time-consuming invasive species to remove. That being said, with enough dili-

gence and a comprehensive long-term plan, European Buckthorn can be successfully controlled, and previously infested natural areas can flourish once again.

Native to Europe, Asia and North Africa, European Buckthorn was introduced to North America in the early 1800s by European settlers who used it to build shelterbelts. By the early 1900s, European Buckthorn, which by that time was being used as an ornamental shrub in fence rows and wildlife habitats had become widespread and naturalized. At present, European Buckthorn can be found in Canada anywhere from Manitoba to Nova Scotia, and is also common in the north-eastern part of the United States.

Though European Buckthorn appears to have a preference

for riparian areas; it is also capable of growing in upland habitats, such as forests, fencerows, woodland borders and even disturbed prairie. Taking full advantage of its long growing season, which begins in early May and can extend into early November, European Buckthorn wages a sustained attack on native shrubs and herbaceous plants. Though it primarily reproduces via the distribution of the seeds contained in the fruit it produces, already established trees also reproduce asexually via side shoots and suckers. As if this seemingly unremitting determination to spread in the absence of any real predators were not bad enough, research has shown that European Buckthorn also acts to directly target its native competition. While its lengthy growing season allows it to

grow taller faster, and hence shade out competing species; recent research has confirmed that the fruit and leaf structures of European Buckthorn also contain allelopathic chemicals that act to inhibit the growth of many competing organisms.

Control

When it comes to the control of European Buckthorn there are no easy solutions. Though the application of herbicides in the fall is often thought to be a surefire method of control, regrowth can, and most certainly does, occur. While mowing and burning can be used to prevent seedlings from spreading, most studies have shown that neither of these methods is effective in actually reducing the overall number of buckthorns present in a given area. In fact, some studies have even shown that newly burned areas may serve as a residence for invading buckthorn seedlings and dormant seeds; a complication which may lead, even after several trails, to a (Continued on Page 3...)



European Buckthorn berries (top) and leaves (bottom).
Photo by: City of Winnipeg

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re-infestation even worse than the original one.

Since uprooting trees can effectively prevent re-sprouting, this tactic should form an essential part of any plan of action. In the case of the Assiniboine Riparian Forest Restoration Project, the Extractigator™ – a jaw-like mechanism that allows trees to be wrenched from the ground – has proven exceedingly effective. The success we have had this year in controlling European Buckthorn just goes to show that as daunting as a large infestation of buckthorn can be, one should not underestimate just how effective this kind of plain old hard-work can be; especially when it is combined with a comprehensive long-term plan, and supplemented by other methods of control – such as the injection of more mature buckthorns with the herbicide Glyphosate.

The Extractigator™

This device, which was invented in 2000 by a British Columbia native with a background in mechanical engineering, has become an essential tool for any group or organization hoping to deal with the spread of invasive shrubs or tree species. Ideal for removing European Buckthorn, The Extractigator™ has also been reported to work extremely well on other invasive species, such as Scotch Broom, Caragana, and Russian olive.

With an ingenious design that allows the user to take full advantage of their body weight, The Extractigator™ is not only one extremely efficient piece of machinery, it is also one of the most user-

friendly devices one can imagine. In fact, The Extractigator™ is so user-friendly, that one may risk suggesting that using it is actually quite fun. Beyond being a useful tool for attracting volunteers, the actual working capacity of these devices should not be understated. With enough persistence and an adequate number of individuals, they can be used to remove both large trees and large numbers of trees over the course of a given season.

That being said, The Extractigator™ does have its limitations. While it is clearly limited by the size of trees it is capable of wrenching from the ground; it can also have the negative effect of disturbing the surrounding understory – something which is more of a problem in areas where a diverse understory remains in spite of the presence of invasive species. In most cases it is best to couple use of this device with a variety of other methods of control. In the case of European Buckthorn, the ripening of berries throughout August and early September can make the use of the Extractigator™ fairly difficult. Since any disturbance of mature trees at this time in the season may actually help rather than hinder the distribution of Buckthorn seedlings, it becomes necessary to shift tactics toward the sawing of mature trees and the application of herbicides.

Restoration

Whatever variety of methods is taken to control European Buckthorn, what is needed now more than ever is long-term planning. As old-growth slowly disappears, it is absolutely essential that there is



The Extractigator™ gripping on to a European Buckthorn tree.
Photo by Carly Dow, MNS



Removing a European Buckthorn with the Extractigator™.
Photo by Carly Dow, MNS

something other than European Buckthorn to take its place. As removal projects progress, further consideration of how natural areas should be re-planted in order to diminish the possibility of re-infestation needs to be undertaken. This is a crucial step which can best be achieved through the strengthening of networks, and the continuation of partnerships between those work-

ing to combat this unwanted invader.

For more information about the Assiniboine Park Forest Restoration, please contact the Project Coordinator at (204) 986-7235.

Using GPS/GIS to Map Invasive Species - MWSA Workshops

**By Stephen Gietz,
GIS Technician, Invasive
Species Council of
Manitoba (ISCM)**

On June 26th and July 9th, a team from the Invasive Species Council of Manitoba (ISCM) consisting of Julie Pelc, the ISCM Coordinator and Stephen Gietz, the GIS Technician, put on a GPS/GIS (Global Positioning System/Global Information System) workshop for the Manitoba Weed Supervisors Association (MWSA) from the western and eastern parts of the province. The purpose of the workshop was primarily as an introduction to the GPS unit and software, as well to meet the different Weed Supervisors and talk about issues that each Supervisor faced in their area. The June 26th workshop took place in Brandon at the Agriculture Canada building for the western region and July 9th in Winnipeg at the Living Prairie Museum for the eastern region.

The workshop started off with an introduction to the ISCM — who it is and what role it plays in facilitating invasive species control. This was followed with individual introductions of each of the Weed Supervi-

sors, their areas, familiarity with the GPS and any weed issues that they faced within their region. Since the GPS is still a relatively new technology, a brief introduction to the GPS unit was given followed by some time outside getting familiar with the unit and its many features. For some the GPS was a new idea in terms of mapping and documenting treatment areas and spray rates, while for others the concept was already in transition. At both workshops there were varying levels of proficiency with the GPS units. Before each group headed outside for some hands on practice, the different functions of the GPS unit were reviewed. Some of these functions included marking waypoints, changing the label and symbol of the waypoints, adding and removing different pages that could assist with the job, as well as just getting a feel for the operation of the unit. Once outside the usefulness of the different functions of the GPS unit were soon discovered. The ability to quickly calculate areas as well as the ability to mark locations were seen by most to be greatly beneficial.

In the afternoon the groups brought the data that they had



Weed Supervisors collecting GPS data at the Living Prairie Museum, Winnipeg, Manitoba. Photo by: Julie Pelc, ISCM

collected from their practice session outside and were introduced to the computer half of the GPS/GIS equation. The GPS units all came with Mapsource© mapping software that provided a basic map onto which the points they collected could be uploaded. A more detailed mapset from Mapsource©, called Topo Map©, was made available to Weed Supervisors for mapping their points. It was here that the Weed Supervisors all had a chance to familiarize themselves with the software and the different functions that it can perform in conjunction with the GPS.

Once everyone had a chance to use the software and GPS's, a discussion of whether or not this would aid them in the duties as Weed Supervisor began. At this point in time, there were mixed reactions as to whether or not GPS was a good thing. Some have already incorporated it into their operations, while others are still using other methods with similar success. The main concerns were over the accuracy of the GPS units, and the fact that in order to assure increased precision, one would have to

increase the complexity and price of the overall system.

The main goal behind the workshops was a success: To integrate the idea of GPS and GIS systems into the current weed mapping procedure and to provide support as well as develop relationships between the Weed Supervisors and ISCM.

For more information on mapping invasive species in Manitoba, please contact the ISCM at (204) 232-6021 or info@invasivespeciesmanitoba.com



Classroom GPS/GIS training at the Living Prairie Museum, Winnipeg, Manitoba. Photo by: Julie Pelc, ISCM



Workshop participants collecting GPS data in Brandon, Manitoba. Photo by: Julie Pelc, ISCM

Purple Loosestrife: “The Beautiful Killer”



Purple loosestrife (*Lythrum salicaria* L.) invading a native wetland.
Photo by: Graham Hnatiuk, MPLP

**By Steve Sendall and
Natasha Klaponski, Urban
Green Team members of the
Manitoba Purple Loosestrife
Project (MPLP)**

What is the problem?

Many valuable wetlands in North America have been degraded following the establishment of the invasive alien plant purple loosestrife (*Lythrum salicaria* L.). Conventional methods have been unsuccessful at providing long-term control. Purple loosestrife aggressively invades wetlands and displaces native vegetation in pastures, marshes, lakes, ponds, drainage ditches, riparian areas (interface between land and a stream), and hay meadows.

Purple loosestrife can produce 2-3 million viable seeds every year, allowing an infestation to spread quickly. Since the plant typically grows along waterways, the use of chemical herbicides is not a feasible mode of control, leaving native plants without a chance. Aquatic habitats are extremely sensitive and herbicide application may cause serious repercussions for wildlife and fisheries. Currently, there is no herbicide registered in

Canada that is safe to use over open water. However, the introduction of leaf eating beetles into infected regions has provided an effective alternative biological control agent in large populations and monocultures of purple loosestrife.

What does it look like?

One of the most easily recognisable features of purple loosestrife, at any time of the year, is its ridged, square stem. A single plant can produce as many as 30 stems growing from a central, woody root mass. The leaves are smooth, opposite, and attached directly to the stem. Each plant can grow as tall as two meters. Purple loosestrife flowers in late June to late September. The flowers are pink-purple in colour and are tightly clustered in a long cone-like shape.

Biological Control

Since the early 1990s, the Manitoba Purple Loosestrife Project has been raising the *Galerucella californiensis* species of beetle (leaf-eating beetle) that are released at infestation sites across the province of Manitoba. In 2008, the project successfully raised

approximately 78,000 beetles. *Galerucella californiensis* larvae typically attack the leaves of the plant, essentially preventing flowering and thus seed production. The beetles do not completely kill the plant's roots, which allows the plant to return in the subsequent years, but they do significantly weaken the plant and prevents its further spread. The weakening of purple loosestrife allows native plants to have a viable chance at competing.

Recent studies have found that the beetles re-locate, travelling to other purple loosestrife patches without human interference. Until the numbers of beetles become

significant enough for widespread use, there are still some ways to help diminish the spread of purple loosestrife. The control of low-density populations can be achieved by hand pulling or manually removing the weed, making sure to properly dispose of the root mass in accordance to local disposal methods.

For more information on the Manitoba Purple Loosestrife Project, please contact the ISCM at (204) 232-6021 or info@invasivespeciesmanitoba.com



Purple loosestrife beetle rearing tents.
Photo by Paul Mutch, City of Winnipeg



Galerucella californiensis larvae.
Photo by: Graham Hnatiuk, MPLP



Purple loosestrife biological control beetle *Galerucella californiensis*.
Photo by: Graham Hnatiuk, MPLP

Who we are...

The Invasive Species Council of Manitoba (ISCM) is a non-profit organization providing a centralized and coordinated province-wide leadership body adopting a collaborative approach to invasive species in Manitoba.

Vision...

Maintain a healthy, bio-diverse landscape through the prevention, early detection, and education and awareness of invasive alien species management practices in order to eradicate or limit further spread.

ISCM Executive Board 2007/2008

Cheryl Heming - ISCM Chair

Julie Sveinson Pelc - ISCM Coordinator

Garth Ball - Manitoba Conservation

Doug Cattani - Manitoba Agriculture, Food and Rural Initiatives

Wayne Digby - Leafy Spurge Stakeholders Group

John Johnston - Manitoba Weed Supervisors Association

Ron Moss - Prairie Farm Rehabilitation Administration

Wendy Ralley - Manitoba Water Stewardship

Karen Rempel - Rural Development Institute

Lisette Ross - Ducks Unlimited Canada

Jane Thornton - Manitoba Agriculture, Food and Rural Initiatives

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- Agriculture and Agri-Food Canada - Prairie Farm Rehabilitation Administration
- Agriculture Sustainability Initiative through Manitoba Agriculture, Food and Rural Initiatives
- Assiniboine Watershed Network, City of Winnipeg, Ducks Unlimited Canada, Manitoba Agriculture, Food & Rural Initiatives, and Manitoba Water Stewardship (in-kind support)
- Dow AgroSciences Canada
- ECO Canada
- Evergreen-Unilever Aquatic Stewardship Grant Program
- Invasive Alien Species Partnership Program, a Government of Canada initiative
- Leafy Spurge Stakeholders Group
- Manitoba Agriculture, Food and Rural Initiatives (MAFRI), Agriculture Sustainability Initiative
- Manitoba Purple Loosestrife Project
- Manitoba Urban Green Team, Province of Manitoba
- Manitoba Weed Supervisors Association
- Rural Development Institute, Brandon University
- Service Canada Summer Jobs, Government of Canada

Upcoming Events

September 9-10, 2008:

IVMA - MAN/SASK, 2008 Vegetation Tour & Seminar Mapping, Management & Monitoring for your Vegetation Programs. Regina, Saskatchewan. www.ivmamansask.com

September 15-18, 2008:

16th Annual North American Weed Management Association (NAWMA) Conference in Billings, Montana, USA. www.nawma.org

October 4 & 18, 2008:

Battle the Buckthorn. Come join ISCM and the City of Winnipeg to help combat an "Unwanted Invader" in Assiniboine Park, Winnipeg, Manitoba, 10:00am-12:00pm.

November 17, 2008:

ISCM is presenting at the Manitoba Naturalist Society (MNS) indoor program at the Franco-Manitoban Cultural Centre, 340 Provencher Blvd., Winnipeg, Manitoba, 7:30 pm. www.manitobanature.ca

November 21, 2008:

ISCM's first AGM. Portage la Prairie, Manitoba, 10:00am-12:00pm.

December 1 to 3, 2008:

Manitoba Conservation Districts Association Convention, Brandon, Manitoba. <http://www.mcda.ca/>

December 4 & 5, 2008:

Manitoba Grazing School, Keystone Centre, Brandon, Manitoba.
<http://gov.mb.ca/agriculture/news/topics/daa79d01.html>

Invasive Species Council of Manitoba

For more information Contact:
Julie Sveinson Pelc, Coordinator
c/o 5006 Roblin Blvd.
Winnipeg, Manitoba R3R 0G7
Phone: (204) 232-6021
Fax: (204) 986-7236
E-mail: jpelc@winnipeg.ca

**Promoting Awareness, Education,
Cooperation and Action regarding
invasive species in Manitoba.**

ISCM Website Coming Soon:
www.invasivespeciesmanitoba.com

Sign up to receive our electronic
newsletters by emailing us at:
info@invasivespeciesmanitoba.com

ISCM's ANNUAL GENERAL MEETING

Friday, November 21, 2008

10:00am to 2:00pm (Lunch included)

Portage la Prairie, Manitoba

~ Agenda details to follow ~



Invasive Species Council
of Manitoba