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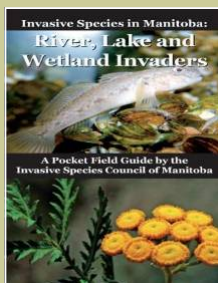
Unwanted Invaders

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RIVER, LAKE & WETLAND INVADERS

Pocket Field Guide by the Invasive Species



Email ISCM for a free copy:
info@invasivespeciesmanitoba.com

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Spreading Invasive Pond Plants Degrade Native Ecosystems in Canada

ISCM Press Release, April 27, 2011

Non-native aquatic plants, popular in the new and trendy water gardens, are escaping into natural environments and posing a serious threat to the health of Canada's aquatic ecosystems. The National Invasive Species Working Group (NISWG) believes Canadians need to be aware of the risks posed by these plants becoming invasive in wetlands and waterways.

Flowering Rush (see pg 3) and Yellow Flag Iris (see pg 7), prized for their attractiveness in the water garden, have escaped into the natural environment. Both plants can choke out natural vegetation, dominating the otherwise diverse mixes of native plants. This in turn alters the habitat for animals, insects and birds that rely on native species in healthy ecosystems to sustain them. Readily spread by boaters and anglers, Eurasian Watermilfoil, found in waterways in Ontario and British Columbia, can cause rivers and lakes to stagnate, rendering them uninhabitable and impeding their use for recreational purposes.

As a partnership of Invasive Species Councils across Canada, including Aboriginal organizations, concerned about the threat of invasion posed by non-native species, the goal of the NISWG is to educate the public and raise awareness of the impacts of invasive species, including aquatic plants.

According to Gail Wallin, Coordinator of NISWG, the cost to eradicate invasive plants and restore waterways and riparian areas to their former pristine beauty, health, and function is greater than the cost of preventing them from being invaded in the first place. She says volunteer detection networks (i.e. 'spotters') and early response protocols are being developed to train concerned citizens to recognize invasive species across Canada. Having an informed public who recognize and report newly discovered invasive species will help to protect and preserve

Canada's natural heritage.

'Canadians who are concerned about the health of the environment are a vital part of the solution to protect our natural heritage and life support systems from coast to coast to coast.'



Yellow-flag Iris, ISCM.

Prevention is the most cost effective way of dealing with invasive, non-native species.'

New invasive, non-native plants are moving up from the Southern U.S., or are being introduced from one province to the next. Newly discovered invasive plants include Salt Cedar in Saskatchewan, one of the most costly invaders of waterways and riparian areas in North America. Himalayan Balsam is also threatening the integrity of shorelines, increasing erosion, impacting wildlife, and changing the natural vegetation in natural areas across Canada.

Individuals can report an invasive species in Manitoba to 204-232-6021 or info@invasivespeciesmanitoba.com. Also visit www.invasivespeciesmanitoba.com to learn more or to get involved.

The National Invasive Species Working Group (NISWG) is comprised of council groups from across the country, including the Invasive Species Council of Manitoba, who are working together to raise awareness about invasive alien species and their impacts. Current national initiatives include the development of 'spotters' networks, and horticulture outreach projects.

European Buckthorn Research, Spring 2011 News

By Rob Au, Nature Manitoba

European buckthorn (*Rhamnus cathartica* L.) is an invasive shrub to 6m tall tree with prolific growth and reproductive capabilities. The problematic plant is commonly found growing in riparian areas and fragmented urban forests. In Winnipeg, Assiniboine Park is an epicentre for buckthorn growth with control measures having been in place for at least a decade. However, buckthorn continues to propagate and its legacy remains in the park.

Recently, research has been underway in an effort to control the re-growth and spread of buckthorn in partnership with the Assiniboine Park Conservancy. A study monitoring 142 buckthorn plants was initiated during the fall of 2010 to determine the efficacy of a new biological herbicide, Chontrol Peat Paste (CPP). The active ingredient in the herbicide is a naturally occurring fungal plant pathogen that colonizes and decays the plant from

within following application to cut stems. With the evaluation of the fall treatment only weeks away, it is hoped that CPP will provide park managers with a viable alternative to chemical herbicides, especially for specific habitats / conditions where chemicals cannot be applied. Initial observations show an encouraging absence of re-growth in CPP-treated buckthorn while untreated buckthorn trees are already leafing out. However, formal tree evaluations must be conducted later in the season before any definitive conclusions can be drawn.

Managing for long-term ecosystem health and promoting native plant assemblages is also vital in revitalizing Assiniboine Park. There has been mounting evidence in published literature that certain plants produce substances that may reduce the growth of other plants nearby. A developing project at the City of Winnipeg Naturalist Services Branch in partnership with Nature Manitoba aims to reduce buckthorn seed germination under this premise. The research will reveal



A European buckthorn stem girdled in November 2010 and monitored in the ongoing study regarding the biological herbicide, Chontrol Peat Paste. Photo Credit: R. Au

whether the leaf litter of various native plant species will inhibit growth of germinating buckthorn seedlings. It is hoped that selectively planting inhibitory native species in areas with thick buckthorn growth will lower buckthorn seedling recruitment and gradually restore the site. The best management practices for buckthorn in the City of Winnipeg may include a combination of mechanical and herbicide interventions along with strategic plantings in the near future.

Information on the 19th Annual North American Weed Management Association (NAWMA) Conference, Winnipeg, September 19-22, 2011

By Cheryl Heming, ISCM Coordinator

ISCM and its partner groups, Integrated Vegetation Management Association of Manitoba and Saskatchewan, Manitoba Weed Supervisors Association, Saskatchewan Invasive Species Council and of course NAWMA are looking forward to the first ever NAWMA conference in Manitoba this fall 2011 and only the third ever held in Canada.

The 19th Conference will be held at the Canad Inns Fort Garry in the south end of Winnipeg, close to the University of Manitoba. A block of rooms has been set aside at the Conference rate under the NAWMA Conference block .

To register for rooms, conference attendees have three options: 1. go on-line to www.canadinns.com (use con-



firmation #: 162675); 2. call the Toll Free Number at 1-888-332-2623; or 3. call the Hotel directly at 1-204-261-7450.

Special features for this year include an evening reception, optional dinner theatre evening at Celebrations and Beef Barbeque Banquet offsite. Three field tour op-

tions in the Manitoba Interlake, south-east Manitoba and City of Winnipeg will be offered on the 21st.

The conference committee of Cheryl Heming, Robin Hamilton, Wanda McFayden, John Johnston, and Michelle Ammeter are hard at work on the program content. A sponsorship package has recently been put together for distribution by the committee. Relevant invasive species abstracts can be submitted to ISCM at info@invasivespeciesmanitoba.com.

Registration & tradeshow packages will be available for download from the NAWMA (www.nawma.org) and ISCM (www.invasivespeciesmanitoba.com) websites in June.

Participants expected from near include: Manitoba, Saskatchewan, Alberta, North Dakota and far include: Invasive Species Councils representatives across Canada, and NAWMA members from across the mid-western United States.

See you in Winnipeg, September 2011!

Don't Rush Out to Buy This Invasive Plant!

Flowering Rush is an attractive water garden plant that is considered invasive in Manitoba, but still sold in garden centers and on the Internet.

By Sandi Faber Routley, ISCM Project Technician

Flowering rush (*Butomus umbellatus*), a perennial aquatic plant native to Eurasia, was brought to North America in the late 1800's for ornamental water gardens. The first observations of this plant in the wild in Canada are from Montreal (ca. 1897) along the banks of the St. Lawrence. Since that time it has quickly spread to naturalize wetlands, sedge meadows, streams, river banks, ditches, and lake shores from Nova Scotia to British Columbia. It can be found growing in wet soil, shallow water, or under water. In Manitoba, it has been observed at Patricia Beach, near Lockport, King's Park and along the Assiniboine River in Winnipeg. The Invasive Species Council of Manitoba would like to find out about locations of this plant across Manitoba.



Flowering Rush flower. Photo credit: Washington State Noxious Weed Control Board.

Biology: Flowering rush grows and spreads primarily from thick, creeping rhizomes, and lesser through seed production. Rhizomes also produce many small tubers (bulblets) that can break off to form new plants and follow water currents to infest new areas. This plant is easiest to identify when it produces characteristic umbrella-shaped clusters of upright flowers. Flowers are deep pink to white in color, 2 to 3 cm across, and on stalks. Stems are 0.5 to 1.5 m tall and resemble bulrushes. Leaves are on opposite sides of the stem, triangular with smooth edges and around 1 m long.

Impacts: Flowering rush tends to colonize areas where new land is exposed as a result of lower water levels. It grows aggressively, displaces native vegetation through its thick root system, and reduces biological diversity. In areas of dense infestation, it can clog irrigation canals and interfere with boating and other recreational activities

Control/Prevention: Flowering rush is still widely available for purchase in garden centers and on the internet as a water garden plant. The best method to control this invasive plant is to not buy it or plant it. Removing Flowering rush by the roots is almost impossible without breakage or leaving fragments behind that form new plants. Cutting below the water surface will not kill the plant, but will limit its abundance and nuisance. Repeated cutting may also weaken the plant over time. Removing all plant pieces is necessary to limit spread



Flowering rush plant. Photo credit: C. Fisher.

and should be dried and composted completely, away from water or wet areas. Discarded plants should be burned or double bagged in garbage bags.

Information: To report a sighting of this plant or to find out information on other aquatic invasive species, please visit

www.invasivespeciesmanitoba.com.

Request a free "Grow Me Instead" brochure for gardeners produced by the Invasive Species Council of Manitoba at info@invasivespeciesmanitoba.com or phone (204) 232-6021.

Proceedings from the Weeds Across Borders 2010 Conference, Plant Invasions: Policies, Politics, and Practices



Weeds Across Borders (WAB), a biennial trilateral conference covering the interests of professionals and organizations involved in North American weed management and regulation, took place during the first week of June 2010 at the National Conservation Training Center in Shepherdstown, West Virginia.

Composed of an affiliation of organiza-

tions from Canada, Mexico, and the United States with a common interest in sharing information and promoting weed management throughout North America, the conference has rotated between the three countries since its inception in 2002.

Over 100 speakers and attendees traveled from 27 states, six provinces, and

five countries to form partnerships between government agencies, universities, industry, non-governmental organizations, and volunteer organizations.

The full proceedings of the 2010 conference are now available for download on the WAB website at:

<http://www.weedcenter.org/wab/2010/index.html>

Invasive Mussels Causing Massive Ecological Changes in Great Lake

From: *Science Daily*, April 17, 2011

The ongoing spread of non-native mussels in the Great Lakes has caused "massive, ecosystem-wide changes" throughout lakes Michigan and Huron, two of the planet's largest freshwater lakes, according to a new University of Michigan-led study.

The blitzkrieg advance of two closely related species of mussels -- the zebra and quagga -- is stripping the lakes of their life-supporting algae, resulting in a remarkable ecological transformation and threatening the multibillion-dollar U.S. commercial and recreational Great Lakes fisheries.

Previous studies have linked the mussels to far-reaching changes in Lake Michigan's southern basin. Now a paper by two University of Michigan ecologists and a colleague shows that the same dramatic changes are occurring in northern Lake Michigan and throughout Lake Huron, as well.

"These are astounding changes, a tremendous shifting of the very base of the food web in those lakes into a state that has not been seen in the recorded history of the lakes," said Mary Anne Evans, lead author of a paper scheduled for publication in the April 15 edition of the journal *Environmental Science & Technology*. "We're talking about massive, ecosystem-wide changes."

Evans is a research fellow at the U-M School of Natural Resources and Environment. The other authors are Donald Scavia, director of U-M's Graham Environmental Sustainability Institute, and Gary Fahnenstiel, senior ecologist at the National Oceanic and Atmospheric Administration's Great Lakes Environmental Research Laboratory.

Because the changes are so profound and are happening so rapidly, the authors recommend that Great Lakes management agencies review and perhaps revise their policies so they can respond more quickly.

"New strategies for managing the lakes are urgently needed. Ecological changes that formerly occurred over decades are now happening in just a few years, so we need to adapt our management policies to this new reality," Scavia said.

This recommendation is especially relevant in the context of the current review of the

Great Lakes Water Quality Agreement by the International Joint Commission, Scavia said. Through the IJC, the United States and Canada jointly manage the Great Lakes.

Though the zebra mussel is better known to the public, over the past decade it has largely been overshadowed by the quagga mussel, which can thrive far from shore in deep, mud-bottomed waters. Each of the fingernail-size quagga mussels filter about a quart of water a day, and billions of them now blanket the bottoms of lakes Michigan and Huron down to depths of nearly 400 feet.



Zebra Mussel (left) & Quagga Mussel (right). Photo credit: Minnesota Sea Grant, msea-grant.umich.edu

They feed on algae, including single-celled plants called diatoms that are encased in glass-like shells made of silica, which the diatoms extract from lake water. Until recently, the diatoms "bloomed" each spring in the Great Lakes, and the level of silica in upper lake waters dropped as diatoms built their protective shells, then sank to the lake bottom, taking the silica with them.

The drop in silica levels due to the spring diatom bloom, known as the seasonal drawdown, has long been used as an indicator of overall algal production in the Great Lakes.

Reviewing records of silica levels in lakes Michigan and Huron collected over the past 30 years by the Environmental Protection Agency, Evans and her colleagues found that algal production throughout the two lakes was about 80 percent lower in 2008 than it had been in the 1980s.

In Lake Michigan, the decrease in the seasonal drawdown coincided with an explosion in the quagga mussel population and its expansion to greater depths, which began in 2004. The same changes occurred a few years earlier in Lake Huron, where quagga mussels greatly increased in abundance between 2000 and 2003.

"For years, all the talk was about the zebra mussels. And then its close cousin comes in, the little quagga mussel, and wreaks even more havoc on these huge offshore systems," said NOAA's Fahnenstiel.

"These changes are unprecedented," he said. "In terms of algal abundance and water clarity, lakes Michigan and Huron are now similar to Lake Superior."

By filtering out the algae, the mussels are robbing other organisms of the food they need to survive. Of particular concern is the plight of *Diporeia*, a tiny shrimplike creature that was one of the pillars supporting the base of the Great Lakes food web.

Nearly every fish species in the Great Lakes relies on *Diporeia* at some point in its life cycle. But *Diporeia* populations have crashed in lakes Michigan and Huron, and the change is already impacting Great Lakes commercial fisheries and the sport-fishing enterprise.

"The big question now is how large the quagga mussel population will get," Evans said. "And when it gets as big as it can get, will it stay at that level or will it die back because it has decimated its own food supply? We don't really know what to expect at this point."

HELP PROTECT MANITOBA'S WATERS

STOP

AQUATIC INVASIVE SPECIES

Aquatic Invasive Species (AIS) threaten aquatic habitats, fisheries and valuable recreational resources.

CLEAN and inspect watercraft, trailer and gear. **Remove** all plants, animals and mud. **Rinse** using high pressure, hot tap water 50°C (120°F).

DRAIN all water from watercraft including the motor, livewell, bilge and bait buckets.

DRY watercraft for at least 5 days in the hot sun (if rinsing is not available).

DISPOSE of unwanted live bait and worms in the trash, and dump bait bucket water on land. **Never release** aquarium pets, plants or water into our lakes, rivers or wetlands.

To report a sighting, or to learn more, call: **1-877-STOP AIS-0** (1-877-867-2470)
Visit manitoba.ca/StopAIS

Prevention is our best defense. Once aquatic invasive species establish, they are here to stay!

Canada Manitoba

Zebra and Quagga Mussels
Multiple rocky, blemished lake bottoms with sharp shells. Multi-million dollar threat to industry by clogging water intake pipes. Costly nuisance for boaters, anglers, and commercial fishers.

Quagga Mussel **Zebra Mussel**

Round Goby
Aggressive, highly fecund and voracious mouth-breeder. A pest to anglers and anglers alike.

Spiny Waterflea
Small invertebrate that consumes large numbers of food. Reproductive rates are high. They are not eaten by smaller fish and are very difficult to control by anglers by overfishing.

Curly Leaf Pondweed
Overgrows, creating dense mats that smother native aquatic plants and destroy fish spawning habitat. Not eaten by herbivores, leading to an angling problem.

Zebra mussels have not been found in Manitoba, but have been discovered in the U.S. portion of the Red River at Wahpeton, North Dakota in 2010. Report sightings of Aquatic Invasive Species to Manitoba Water Stewardship at **1-877-STOP AIS-0 (1-877-867-2470)**.

Upcoming Invasive Species Events

May 2011

- May 28 Arbor Day Celebration 2011 "All Trees Tell A Story", Assiniboine Park, Winnipeg, MB. www.savetheelms.mb.ca
- May 29 Friends of Birds Hill Park Guided Birding Walk, Birds Hill Park, MB. www.friendsofbirdshillpark.ca

June 2011

- June 4 International Trails Day Celebration, Winnipeg, MB. www.winnipegtrails.ca

July 2011

- July 6-8 Noxious and Invasive Plant Ecology and Management Course, University of Nebraska-Lincoln West Central Research and Extension Center, North Platte, Nebraska. Contact Dr. Stephen Young at 308-696-6712 or syoung4@unlnotes.unl.edu.
- July 9 Nature Conservancy Canada-Manitoba Region Leafy Spurge Pull & Hike, Stony Mountain Prairie Preserve, Stony Mountain, MB. See www.natureconservancy.ca/site/Calendar/553526159?view=Detail&id=100801
- June 11 Field Trip: Birding and Botany at Maple Lake, MB. www.mapb.ca
- July 23 Clear Lake Day (& Aquatic Invasive Species Awareness), Riding Mountain National Park, Wasagaming, MB.

August 2011

- Aug 3-4 MAFRI Provincial Pasture Tour, southwest Manitoba region. For information: www.mbforagecouncil.mb.ca or call Linda Ryckman at 204-483-2153.

September 2011

- Sept 10-14 ISA Prairie Chapter Conference & Tree Climbing Championship, Hotel Fort Garry, Winnipeg, MB. www.isaprairie.com
- Sept 19-21 2011 North American Weed Management Annual Conference, Canad Inns Fort Garry, Winnipeg, MB. See 'Current News' at www.invasivespeciesmanitoba.com or visit www.nawma.org.

August 2012

- August 6-10 2012 North American Prairie Conference, University of Manitoba Campus, Winnipeg, MB. www.napc2012.org

The Leafy Spurge Stakeholders Group: What's Happening in 2011

The Leafy Spurge Stakeholders Group (LSSG) has undergone a number of changes over the past 6 months which includes appointing a new chair, development of a new website, and realignment with the ISCM, who will provide administrative & partnership support.

Ron Moss with Agri-Environment Services Branch has assumed the chair role from Wayne Digby, and the group is meeting monthly this Spring in Portage La Prairie. The newly-designed LSSG website will go live to the Public in the next few weeks thanks to the support of Ducks Unlimited, who will host on their server. At that time, the previous website address will be discontinued.

High on the priority for 2011 is a media blitz regarding the recent Economic Impact Assessment (EIA) report released by the Rural Development Institute, Brandon University on Spurge (LS) in Manitoba.

The EIA of LS in Manitoba will be available on the new LSSG website. It is available now on ISCM's website (www.invasivespeciesmanitoba.com) under the terrestrial species link to Leafy Spurge information & brochures. An updated biocontrol manual is also now available - call or email the ISCM office for copies.

For 2012, LSSG and ISCM hope to have a LSSG Response plan in place to contain the high infestation areas of LS in the province.



LSSG

**Leafy Spurge
Stakeholders Group**

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* 2011

Cheryl Heming
ISCM Coordinator

Jane Thornton, Vice-Chair
MAFRI

Glen Campbell
Manitoba Cattle Producers Association

John Johnston
Manitoba Weed Supervisors Association

Ron Moss
Agri-Environment Services Branch

Beverly Dunlop
Agri-Environment Services Branch

Linda Christianson
Manitoba Conservation, Forestry

Leafy Spurge Stakeholders Group

Doug Cattani, Chair
University of Manitoba

Lisette Ross, Secretary-Treasurer
Ducks Unlimited Canada

Wybo Vandershuit
Riding Mountain National Park

Julie Sveinson Pelc
Nature Conservancy of Canada- Manitoba Region

Wendy Ralley / Candace Parks
Manitoba Water Stewardship

Bill Gardiner
MAFRI

Laurie Wesson
Fisheries & Oceans Canada (Emeritus)

*Other Executive members to be confirmed.

The ISCM would like to thank our funding sources and partners, without whom we would not exist:

- Agriculture & Agri-Food Canada, Agri-Environment Services Branch (formerly Prairie Farm Rehabilitation Administration)
- Agriculture Sustainability Initiative, Manitoba Agriculture, Food and Rural Initiatives
- Assiniboine Watershed Network
- Centric Productions
- City of Winnipeg
- Ducks Unlimited Canada
- Dow Agrosociences Canada
- ECO Canada
- Environment Canada, Science Horizons
- Fisheries Enhancement Fund
- Integrated Vegetation and Management Association Manitoba/ Saskatchewan
- Leafy Spurge Stakeholders Group
- Manitoba Agriculture, Food and Rural Initiatives (MAFRI)
- Manitoba Conservation
- Manitoba Purple Loosestrife Project
- Manitoba Urban Green Team, Province of Manitoba
- Manitoba Water Stewardship
- Manitoba Weed Supervisors Association
- Nature Conservancy of Canada, Manitoba Region
- Riding Mountain National Park
- Service Canada Summer Jobs, Government of Canada
- Sustainable Development Innovations Fund, Manitoba Conservation
- T & T Seeds
- University of Manitoba
- Winnipeg Airports Authority



For more information Contact:

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STOP THE INVASION



YELLOW FLAG IRIS IS SOLD IN GARDEN CENTRES AND ON THE INTERNET FOR WET SOILS AND GARDEN PONDS!

UNWANTED PLANTS

Origin

Native to Europe, British Isles, Western Asia, North Africa and the Mediterranean region. It was introduced to North America as an ornamental plant in the early 1900's.

Status

It has been widely planted in North America, including Manitoba, as a water garden ornamental and has escaped cultivation.

Impacts

Grows quickly and spreads through seeds and horizontal rhizomes. Forms dense thickets in the water similar to cattails and displaces native plants. Infestations can impact the habitat of many wetland species such as amphibians and birds.

Where to Look

It can be found growing in marshes, shorelines, rocky shores, ditches, stream-banks, shallow ponds, and irrigation canals.

LOOK FOR:

- ◇ EYE-CATCHING PERENNIAL, 4-6 FT TALL, WITH EXTENSIVE ROOT SYSTEM (RHIZOMES).
- ◇ LEAVES: LONG, FLATTENED, DARK GREEN AND SWORD-LIKE. USUALLY LONGER THAN THE STEM.
- ◇ FLOWERS: YELLOW, 8-10 CM ACROSS, WITH 3 SEPALS CURVING BACKWARD AND 3 SMALLER PETALS POINTING UPWARD.



PREVENT FURTHER SPREAD!

Gloves should be used when pulling this plant because it can cause skin irritation. Remove seed pods to help control expansion. Dig up small infestations and remove entire rhizome system. Use chopping machines for larger infestations. Burn where conditions allow.

Report a Sighting!

E-mail: info@invasivespeciesmanitoba.com

Phone: (204)232-6021

Funding for this project was provided by the **Fisheries Enhancement Fund**



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Photo Credits: Banner: Todd Pfeiffer, Klamath County Weed Control, Bugwood.org; Left plant close-up: ISCM; Right close-up: Joseph M. DiTomaso, University of California - Davis, Bugwood.org