

Invasive Species of Concern in Saskatchewan



**Native Plant Society
of Saskatchewan**



**saskatchewan
INVASIVE SPECIES
COUNCIL**

Introduction

- Restoration/revegetation is difficult, time-consuming and costly.
- Ideally, you want everything to go smoothly.
- Goal is to identify and eliminate/mitigate potential issues.
- Invasive plants are a common issue that can set back or ruin a restoration/revegetation project.
- Generally, every year of pre-planting weed control will save you 2-3 years of catch-up with post-planting management.

Bromus tectorum

Downy Brome, Cheatgrass

Problem:

- Begins growth very early in the spring
 - heads out in April or May;
 - seed matures in mid-June to mid-July in SK
- Early growth enables it to outcompete other plant species, avoid summer droughts, survive fire and alter fire regimes



John M. Randall TNC

Bromus tectorum

Downy Brome, Cheatgrass

Reproduction:

- Prolific seed producer; yields of 450 kg/ha (330,000 seeds/kg) reported
- Under stress it can produce seeds when plants only 2.5 to 5 cm tall
- Normally a winter annual
- Seeds can lie dormant for more than 3 years



**Severe infestation
(reddish colour)**

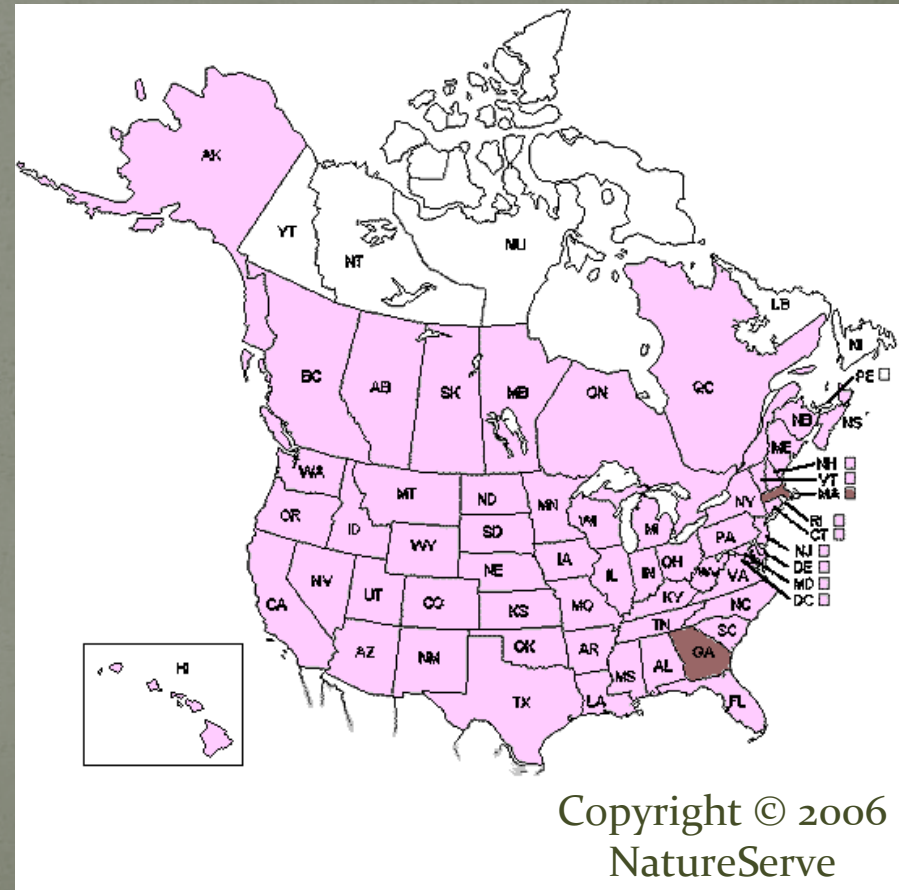
John M. Randall, The Nature Conservancy, Bugwood.org

Bromus tectorum

Downy Brome, Cheatgrass

Habitat:

- Rangeland (especially if overgrazed), sand dunes, roadsides, railroads, zero till farmland, shelterbelts, and fencerows
- Known to invade undisturbed areas
- Does especially well on soils high in potassium; thrives in dry conditions



Bromus tectorum
Downy Brome, Cheatgrass

Control:

Prevention and Early Detection/Rapid Response:

- Ensure seed mix is free of downy brome
- Ensure seed bank is free of downy brome and that any adjacent infestations are being managed

Mechanical and Chemical Control:

- Options include hand-pulling, herbicide, and frequent mowing. Herbicide may not be an option if you already have native grass seedlings growing

Melilotus sp. Sweet Clover

In Saskatchewan, there are 2 species:

- White – *Melilotus alba*
- Yellow – *Melilotus officinalis*

Problem:

- Originally brought to Canada as a forage/hay crop, has now spread throughout Canada.



Melilotus sp. Sweet Clover

Problem:

- Biennial that produces hundreds of seeds that are spread by soil/gravel transportation, wildlife and water. Seeds can stay dormant for decades or germinate quickly
- Still planted by many farmers and ranchers for hay/forage
- Tolerant of a wide range of soil types and climatic conditions



Melilotus sp. Sweet Clover

Problem:

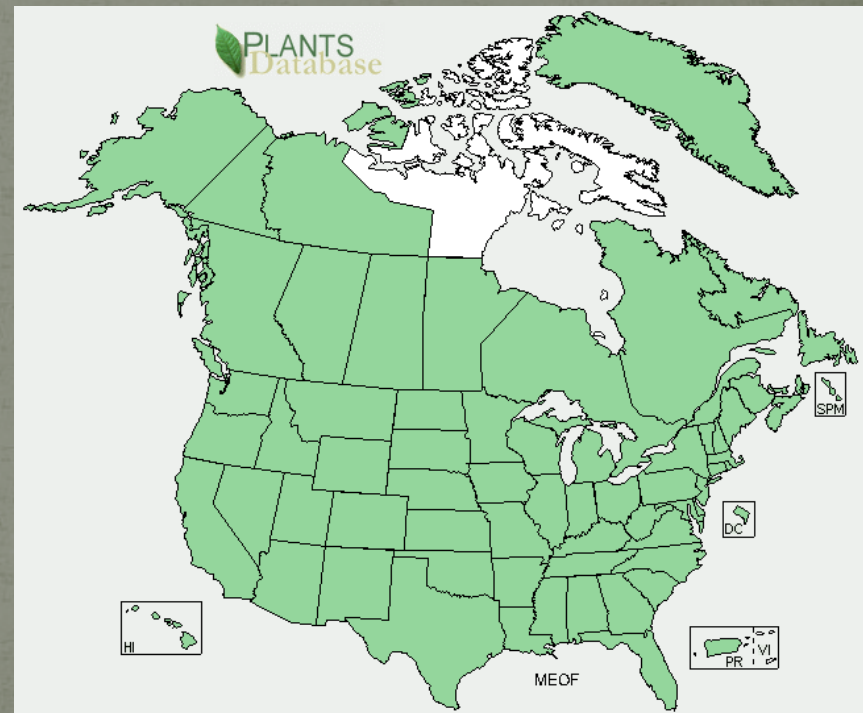
- Living stalk is very tough and old stalk is very woody (tough plant)
- Grows quickly and can form dense thickets that are difficult to move through and shade out plants – a problem for new restoration sites



Melilotus sp. Sweet Clover

Habitat:

- Ditches, rangeland, gravel pits, waste areas, riparian corridors
- Prefers full sun
- Can tolerate sandy soils, gravelly or coarse soils or poor soil (it fixes nitrogen)



Melilotus sp. Sweet Clover

Control:

Prevention and Early Detection/Rapid Response:

- Ensure seed mix is free of sweet clover
- Ensure seed bank is free of sweet clover and that any adjacent infestations are being managed

Chemical:

- Any broadleaf herbicide will work
- The plant is most easily treatable in the rosette stage, but also most difficult to detect

Melilotus sp. Sweet Clover

Mechanical:

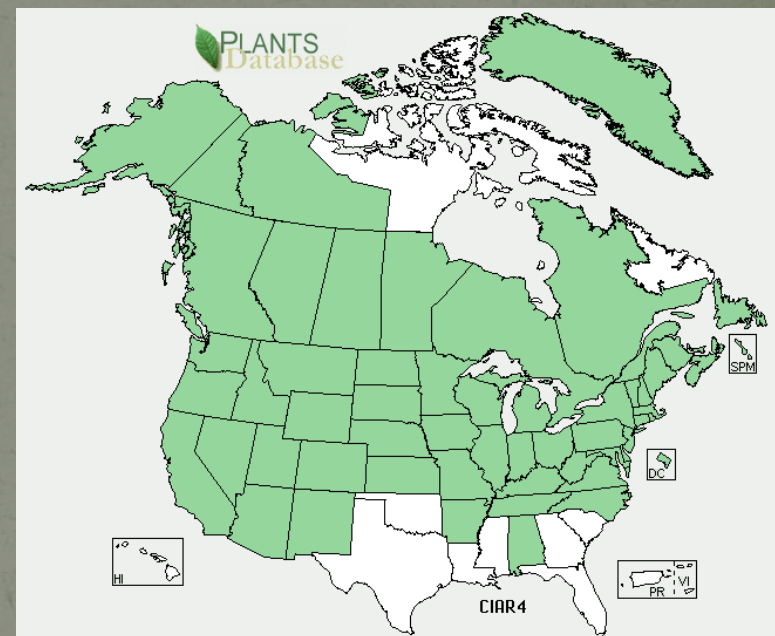
- Mowing can impact sweet clover if done repeatedly (at least 3 times per season) and over many years
- If not mowed frequently enough, sweet clover will set seed
- Clippings can also smother native seedlings



Cirsium arvense Canada Thistle

Habitat:

- It grows on various soil types
- It thrives on disturbance
- It can withstand a variety of moisture conditions, right up to standing water
- It can grow in full sun to part shade



Cirsium arvense Canada Thistle

Reproduction:

- Canada thistle is capable of producing thousands of seeds
- It also has extensive rhizomes up to 4.5 m long (and roots up to 6 m deep)



Cirsium arvense Canada Thistle

Control:

Prevention, Early Detection/
Rapid Response:

- Ensure that any seed bank is exhausted and that local populations are being controlled

Manual:

- Pulling is an option for young plants with a small infestation, but will require several years to be successful



Cirsium arvense Canada Thistle

Control:

Mechanical:

- Cultivation is not recommended as it cuts and spreads rhizomes which will regrow, and will encourage seed germination
- Mowing will only prevent seed production and slow rhizome spread, but must be repeated often and for years



Cirsium arvense Canada Thistle

Control:

Chemical:

- The most effective option
- Many broad-leaved herbicides available
- Spraying in rosette stage most effective, can also spray just before flowering
- Can spray in combination with other control methods (ie. Mowing)



Cirsium arvense Canada Thistle

Control:

Biocontrol:

- Certain stem and flower weevils, and one species of fly have been used in the past but they also targeted native thistles
- A fungus is being tested (it also might be tank mixable)



Tanacetum vulgare

Common Tansy

Problem:

- Mature plant is unpalatable to livestock and wildlife
- Can be toxic in large quantities
- Prolific seed producer (each plant 50 thousand seeds)
- Superior ability to absorb nutrients on nutrient poor substrates
- Still grown in gardens
- Allelopathic



Steve Dewey, Utah State University,
www.forestryimages.org

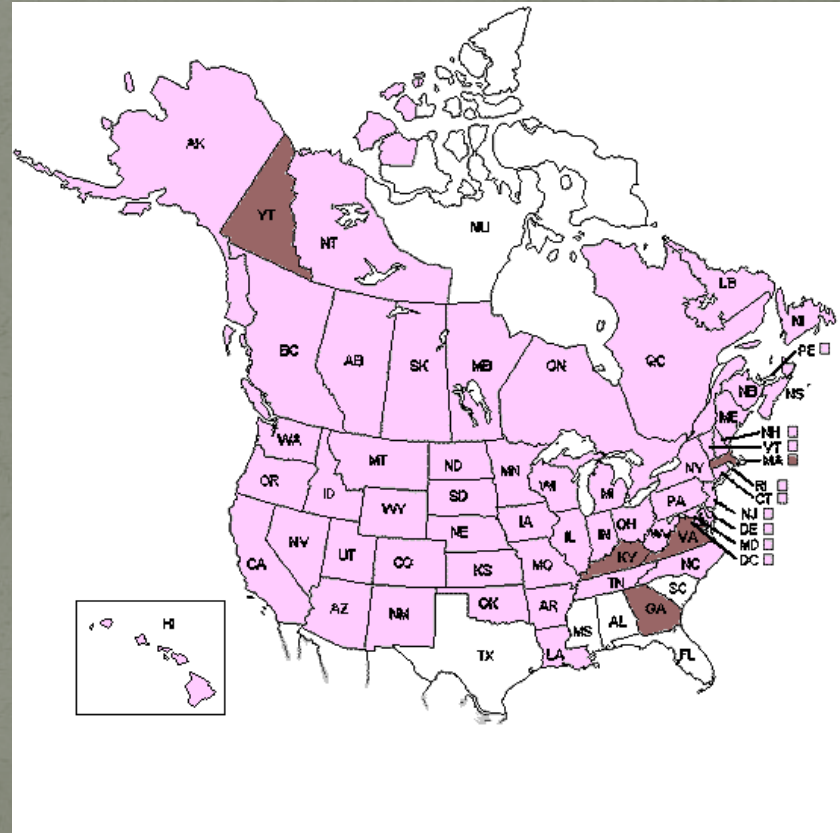


Mary Ellen (Mel) Harte,
www.forestryimages.org

Tanacetum vulgare Common Tansy

Habitat:

- Roadsides, low areas, urban areas, stream banks and open areas



Tanacetum vulgare

Common Tansy

Control

- Long term commitment because seeds can remain viable in the soil for 25 years

Prevention, Early Detection/Rapid Response:

- Ensure any local populations are being controlled

Chemical:

- Telar (chlorsulfuron) registered only for total vegetation control in industrial areas and rights of way
- Escort (metsulfuron methyl) most effective chemical control; applied to actively growing plants less than 4 inches tall
- Neither herbicide registered for use within 30m of water and will have some impact on non target vegetation

Tanacetum vulgare

Common Tansy

Mechanical:

- Mowing at bud stage and hand pulling decent alternative to herbicide use near waterways
- Most effective control is mowing or cutting followed by herbicide treatment

Biological:

- Currently, biological control studies underway in Alberta and Switzerland

Matricaria perforata Scentless Chamomile

- This weed is a serious problem to rural municipalities, wildlife conservation areas, railroads and highways due to the cost and difficulty in managing it

Scentless Chamomile Infestation Near Saskatoon



Gary Peng, AAFC

Matricaria perforata

Scentless Chamomile

- In infested fields, scentless chamomile often becomes the worst weed problem due to the difficulty of control
- Well adapted to heavy soils around riparian areas, which allows near monocultures to grow



D. Nordstrom

Matricaria perforata Scentless Chamomile

- Scentless chamomile is a very prolific seed producer
 - A single plant can produce over a half million seeds
- The seeds are easily dispersed by machinery, flowing water and drifting snow
- Under the right conditions, seed can lie dormant in the soil for a decade or more

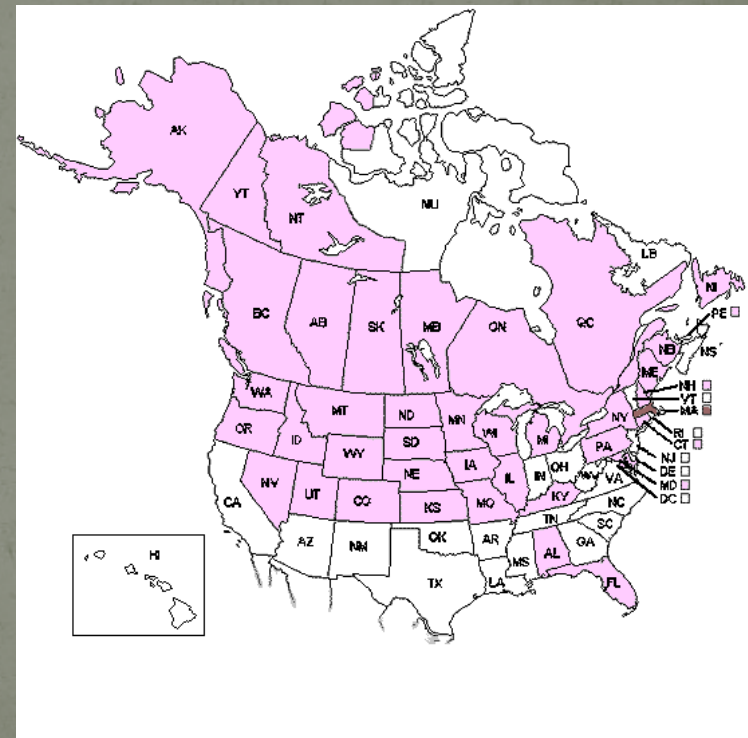


Gary Peng, AAFC

Matricaria perforata Scentless Chamomile

Habitat:

- The weed is often found in moist, disturbed areas such as roadsides, farmyards, sloughs, cropland, pastures, utility rights-of-way, shelterbelts, drainage ditches and waste areas



Matricaria perforata

Scentless Chamomile

Control:

Prevention, Early Detection/Rapid Response:

- Watch for rosettes in newly seeded areas and ensure the plants are controlled prior to flowering

Manual:

- Hand-pulling can prevent spread into new areas and can be effective on small infestations

Mechanical - Tillage:

- Late fall and early spring cultivation may control young winter annual rosettes

Matricaria perforata

Scentless Chamomile

Mechanical – Mowing:

- Seed production can be prevented if plants are mowed just before flowering, but it must be done often and at progressively lower cutting heights

Chemical: (see crop protection guide)

- Picloram, dicamba, and MCPP have been effective in non-crop areas
- Apply herbicides early in the season before flowering

Biocontrol:

- The bud-gall midge, *Rhopalomyia tripleurospermi*
- In research, Agriculture and Agri-Food Canada has been evaluating a host-specific fungus called *Colletotrichum truncatum*

Gypsophila paniculata Baby's Breath

Problem:

- Very long taproot (up to 4m)
- Drought tolerant
- Produces many, tiny seeds
- Forms dense infestations that crowd/shade plants and even invades native habitat

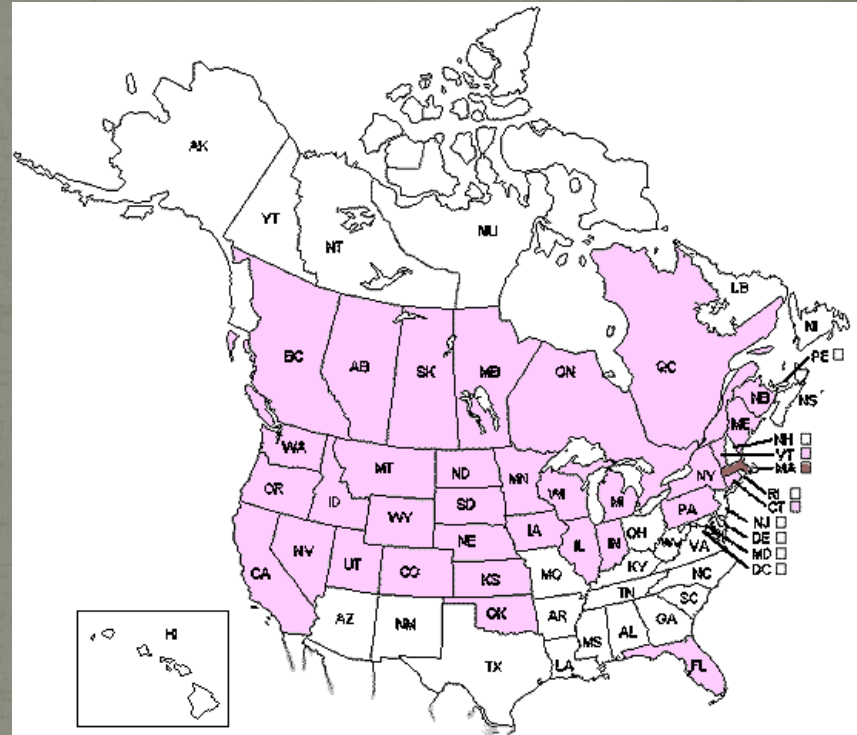


Gypsophila paniculata

Baby's Breath

Habitat:

- Will grow in all types of soil, but thrives in stabilized sand dunes
- Displaces native plants



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Gypsophila paniculata Baby's Breath

Control:

Prevention, Early Detection/ Rapid Response:

- Watch for seedlings in newly seeded areas and ensure the plants are controlled prior to flowering



**Baby's Breath Clean-up in
Saskatchewan**

Gypsophila paniculata

Baby's Breath

Control:

Mechanical:

- Sever tap root as far down as possible with spade
- Vigor not reduced by mowing or clipping
- Tillage good for seedlings

Chemical:

- Many herbicides are registered for baby's breath and are effective
- Due to airy structure of plants, it is sometimes difficult to get good herbicide absorption



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**The Saskatchewan Invasive Species Council:
Facilitating action in the battle against invasive species in Saskatchewan!**

Google search

Contact Us

Email: info@nps.sk.ca
Phone: (306) 668-3940
Fax: (306) 668-3940
Mail: Saskatchewan Invasive Species Council
P.O. Box 21099
Saskatoon SK S7H 5N9

Quick links:

To download presentations from the recent Zebra Mussel Workshop held in Saskatoon on April 28, 2010, click [here](#).



Throwing some firewood in the car before a trip might seem like a good idea, but those logs can kill a forest. For more information, click [here](#).



Zebra mussels have been found on a boat entering Saskatchewan! Clean your boat every time you go to help stop the spread. Click [here](#) for more information on zebra mussels.



The Saskatchewan Invasive Species Council is pleased to acknowledge its partners:



You're Invited!

NPSS Annual General Meeting and Conference

- Feb. 6-7, 2015
- TCU Place
- Keynote Speaker: Scent Detector Dogs for Rare Plant Surveys
- Others: Drones for plant conservation, the future of invasive species management, effects of smooth brome on soil and veg community, book reading "Blue Grama"
- Film screenings

Helpful Websites

- <http://www.saskinvasives.ca>
- <http://www.imapinvasives.org/skimi>
- <http://www.invasivespeciesmanitoba.com>
- <http://www.abinvasives.ca/>
- <http://www.agriculture.gov.sk.ca/>
- <http://www.gov.mb.ca/agriculture/>
- <http://www.brandonu.ca/rdi/>
- <http://www.nawma.org/>
- <http://www.ivmamansask.com>
- <http://www.inspection.gc.ca/english/plaveg/invenv/invenve.shtml>
- <http://www.weedcenter.org/>
- <http://www.bugwood.org>
- <http://plants.usda.gov/java/noxiousDriver>
- <http://www.nature.org/initiatives/invasivespecies/>
- <http://www.fhwa.dot.gov/roadsides>

Chet Neufeld
(306) 668-3940
info@npss.sk.ca