

# NOXIOUS WEED QUARTERLY

NORTH DAKOTA DEPARTMENT OF AGRICULTURE

Winter 2005

Vol. 2, No. 3

## Invasive species seminar features full plate

More than 30 presentations on invasive species and noxious weeds are planned for the 2005 Invasive Species Workshop, April 5-7, at the Best Western Ramkota Hotel in Bismarck.

Attracting scientists and weed control and wildlife officials from across the Midwest, the three-day event is sponsored by the North Dakota Department of Agriculture, North Dakota Game and Fish Department, North Dakota Parks and Recreation Department, North Dakota Weed Control Association, North Dakota Chapter of The Wildlife Society, and the U.S. Fish and Wildlife Service

Registration is from 9 a.m. to 10 a.m., followed by a welcome and by keynote addresses by John Hendrickson and Russ Lorenz.

Tuesday's presentations include:

### 1:30 – 2:00

Land management history and floristic integrity in mixed-grass prairie.

Results from the Benson-Towner County weed control project.

### 2:00 – 2:30

Changes in woodland cover on prairie refuges in North Dakota.

## Important!

Pre-registration is **required** for attendance at the invasive species workshop and is due by March 10, 2005. A registration form for the workshop can be found on Page 6 of this newsletter.

Devils Lake Wetland Management District integrated pest management plan.

### 2:30 – 3:00

Application of GIS to integrated pest management on U.S. Fish and Wildlife Service lands.

### 3:00 – Break

### 3:20 – 3:40

Rates of invasion of habitats in the Little Missouri National Grasslands.

Alteration of plant community structure by leafy spurge: implications for vegetation recovery following control.

### 3:40 – 4:20

Fundamental research in the fight against leafy spurge: Bud dormancy and growth.

### 4:20 – 4:50

Response of vegetation and endangered waterbirds to habitat manage-

ment techniques at Kealia Pond NWR  
Effects of various herbicides, application timings, and milkweed size on milkweed control in wheat.

Wednesday sessions include:

### 8:00 – 8:30

Rangeland Health - ecological impacts.

ANS: Education, prevention, and monitoring activities in North Dakota.

### 8:30 – 9:00

Fire enhanced spread of invasive species in the South Dakota Black Hills.

An integrated management strategy for the control of purple loosestrife.

### 9:00 – 9:30

Control of smooth brome and Kentucky bluegrass using fire and fire plus chemicals in the northern great plains.

### 9:30 – 10:00

Riparian woody revegetation via direct seeding.

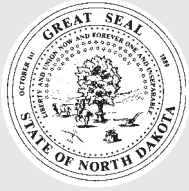
Hybrid Tamarix widespread in U.S. invasion and undetected in native Asian range.

### 10:00 – Break

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This newsletter is provided free-of-charge to county and city weed board members, weed control officers, weed scientists and other interested persons. Please address all correspondence to:

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# Legislators look at weed-related bills

The North Dakota Legislature is currently considering several bills that pertain to county and city weed boards and weed officers. Details are available at:

<http://www.state.nd.us/lr/assembly/59-2005/leginfo/bills-res-jour/>

This site provides each bill as introduced, as well as information about amendments, committee action, current status, etc.

Bills that relate to weed boards and officers include:

### Bill Number

- HB 1025 Removes Weed Boards and other groups from consolidated mill levy.
- HB 1327 Allows the use of ATV sprayers on in-slopes of highways.
- HB 1342 Allows ATV use also, but is more comprehensive than HB 1327
- SB 2280 Changes several provisions of Chapter 63 of the Century Code – the Noxious Weed Law – including hiring of employees, weed board duties and other changes.

## Noxious weed programs and contacts

This is a listing of Noxious Weeds programs within the North Dakota Department of Agriculture, together with the personnel responsible for each program. Phone numbers and e-mail addresses are in the shaded box at left.

### Program

### First contact

All program vouchers	John Leppert
Annual weed board report/Annual weed survey	John Leppert
Biological control	Rachel Seifert-Spilde
Cooperative weed management grants	Ken Eraas
CRP	Ken Eraas
Education	Ken Eraas
GPS, GIS, mapping	Rachel Seifert-Spilde
Industrial hemp	John Leppert
LAP (Landowner Assistance Program)	John Leppert
New Invasive Weeds Program	Ken Eraas
Purple loosestrife	Ken Eraas
Quarantines and enforcement issues	John Leppert
Saltcedar Grant Program	Rachel Seifert-Spilde
State & federal land management issues	Jeff Olson, John Leppert, Rachel Seifert-Spilde
Weed Free Forage Program	Ken Eraas

# ARS researchers focus on genetics of Canada thistle populations

BY MIKE FOLEY, PHD.

Canada thistle is a noxious weed in North Dakota and throughout much of the northern reaches of North America. It is native to Eurasia and is believed to have been introduced to New England through shipping during colonial days. It is often found in agricultural and urban areas, as well as in natural areas such as parks. Canada thistle infestations have been increasing in recent years, probably due to above average precipitation. In addition, new research suggests its proliferation may be enhanced by increasing concentrations of carbon dioxide in the atmosphere. Whatever the reason, Canada thistle seed can invade any place the wind blows. One of the reasons Canada thistle has become such a successful weed in North America, is that there are no naturally occurring pests (insect, bacteria, fungus, or virus) to limit its production and spread. Herbicides can be applied, but due to the plant's deep perennial root system, new growth often emerges and persists without repeated spraying or physical removal. In any case, spraying herbicides and physically removing Canada thistle is impractical in natural areas.

Biological control is an attractive option for weed management in natural areas. In many of these areas, weedy thistles and native thistles that pose little, if any, threat to agriculture grow side-by-side. Native thistles (field, Flodman, tall, wavy-leaf, etc.) serve as a source of nectar for honey production and their seeds as a food source for birds and small mammals. Some native thistles are on threatened and endangered species lists. Classical biological control agents, such as the flower head weevil (*Rhinocyllus*) and a second Eurasian thistle weevil

## *Slotta joins research effort*

Dr. Tracey Slotta was hired as a post-doctoral research associate in August 2004 by the USDA-ARS Plant Science Research unit in Fargo. She will be examining gene flow within and between populations of Canada thistle (*Cirsium arvense*) and investigate the genetic basis of its distribution. Slotta received her Ph.D. in July 2004 from Virginia Polytechnic Institute and State University, where her training as botanist included studying genetic and physical differences between closely related plants, some of which are on the U.S. endangered species list. Slotta has collected Canada thistle from many populations in North Dakota and parts of Minnesota in August and September, and will resume collection in late spring. Meanwhile, she and an undergraduate assistant from North Dakota State University are extracting DNA from the plant samples. In addition, Slotta is developing some tools of the trade like the DNA markers required for the population genetic analysis. She plans to present a paper on her initial work at Invasive Species Workshop to be held in Bismarck, April 5-7, 2005.

(*Larinus planus*) were introduced as a cost effective method to limit seed production of musk, Canada and other weedy thistles. Unfortunately, to some weevils a thistle is a thistle.

*Rhinocyllus* has been found attacking wavy-leaf (*C. undulatum*) and Platte (*C. canescens*) thistle and *Larinus* on Tracy's thistle (*C. undulatum* var. *tracyi*) leading to drastic reduction in seed production in our native wild-flowers. Controversy over the ecological risks for classical biological control has largely halted such research for Canada thistle. In any event, there are steps that can be taken to increase the safety of biological control. Many of the steps involve developing a greater understanding of the ecology and biology of the target weed and selected agent.

Our research on Canada thistle is aimed at determining genetic relationships within the thistle genus *Cirsium* as a step to determine if biological control is an option for the control of Canada thistle. As the first step, we

are developing and using genetic markers to examine the level of variation in Canada thistle. Why? The genetic markers we are using target specific regions of the plants' DNA to find unique patterns, not unlike looking at fingerprints. Within a population or stand of Canada thistle, some plants will have identical patterns; these are either sibling plants or all grow from the same rootstock. Other plants in the population may have only a few differences, these plants may be cousins or share the same father (pollen source) but have different mothers. These differences, or lack there of, will show how much variation (genetic diversity) is within a population. In looking at many populations across the region, the bigger picture of movement of pollen and genes between stands of Canada thistle can be studied.

What will looking at the genetic diversity of Canada thistle populations

Continued on page 7

# Chamomile species easily confused

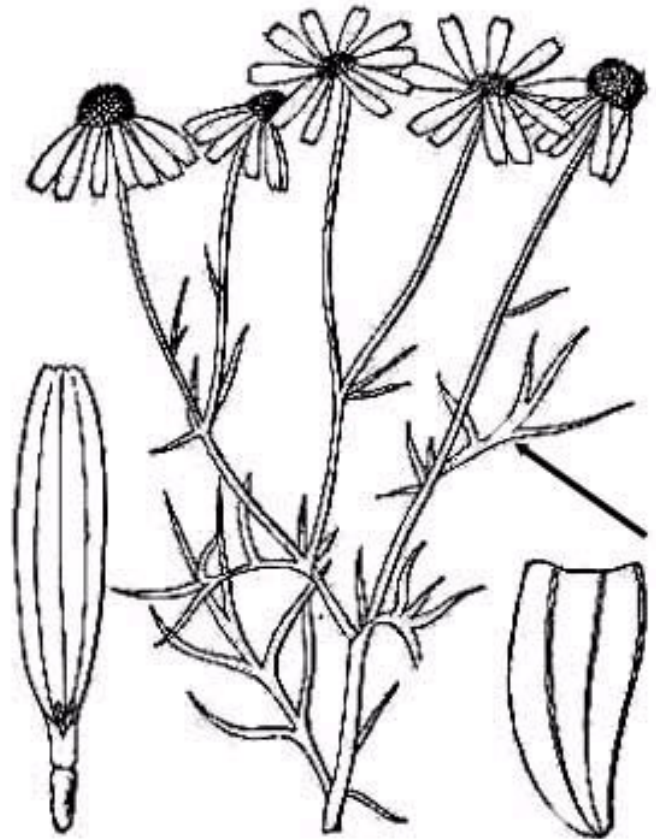
RODNEY G. LYM, PHD.

False chamomile (*Matricaria chamomilla* L.) and scentless chamomile (*M. maritima* L.) are members of the aster family and have flowers resembling the common daisy. Both plants are native to Eurasia, are considered naturalized in the Northern Great Plains, and are common in the region. It is important to correctly identify them because false chamomile is now listed on noxious weed lists in Walsh and Ward counties and will soon be added to the Cavalier County list. The most obvious difference between the two species is the pleasant aroma of false chamomile, while, as the name implies, scentless chamomile has very little odor when crushed.

Both chamomile species are annual herbs and have white daisy-like flowers. False chamomile blooms from May



**Scentless chamomile**  
(*Matricaria maritima* L.)



**False chamomile**  
(*Matricaria chamomilla* L.)

through August, and scentless chamomile blooms somewhat later from June through September. Plants grow 6 to 18 inches tall and are commonly found in wet sites, road ditches, old gardens, and weedy (waste) areas. Scentless chamomile flowers tend to be larger (1 to 1.5 inches across) than false chamomile (0.5 to 1 inch across). Both plants have very finely divided leaves from 0.75 to 2.3 inches long, but scentless chamomile generally has more leaves and appears bushier than false chamomile.

False chamomile has been used for medicinal purposes for hundreds of years and is most often consumed today as chamomile tea, which reportedly has relaxation benefits. As with many homeopathic medicines, chamomile is credited with curing a variety of aches and illnesses including soothing and calming of nerves, reducing inflammation and aching muscles, and reducing hay fever, asthma, and morning sickness. Today chamomile is commonly found in air fresheners, cosmetics, insect repellents and potpourri.

False chamomile was a candidate for the North Dakota state noxious weed list in the late 1970s and early 1980s because the weed was spreading fast in cropland, especially in the north central region of the state. Many farmers were concerned because false chamomile was tolerant to all herbicides then available for use in crops. With the

Continued on page 7

# Weed officer/weed board seminar set

A Weed Officer/Weed Board Seminar, a comprehensive program covering the work and business of county weed boards, sponsored by the North Dakota Weed Control Association, will be held Feb. 23-24, at the James River Senior Center, 502 10th Ave. SE, Jamestown.

Participation is limited to 30 persons. Registration is \$20. Interested persons should contact:

Bill Ragan, Stutsman County Weed Officer  
511 2<sup>nd</sup> Ave SE  
Jamestown, ND 58401  
(701) 251-1261 or (701) 320-4512 (cell)  
[wragan@state.nd.us](mailto:wragan@state.nd.us)

For information on Jamestown motels, see the last NDWCA newsletter or contact Bill directly.

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## Wednesday, Feb. 23

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- 10:00-10:15 Welcome
- 10:15-11:30 County weed board panel discussion
- *Weed officer job description*
  - *Weed management plan*
  - *Compensation*
  - *Continuing education.*
- 11:30-noon Lary Olson, former Stutsman Co. auditor
- *Budget considerations*
  - *Fiscal year*
  - *Open meeting law*
- Noon-12:30 Lunch

- 12:30-1:30 Fritz Fremgen, Stutsman Co. State's Attorney  
*Using state's attorney services.*
- 1:30-2:45 John Fluth, chemical insurance adjuster  
*Dealing with chemical drift and damage.*
- 2:45-3:00 Break
- 3:00-4:00 Judy Nohrenberg, Stutsman Co. FSA Director  
*Farm Service Agency and county weed boards.*
- 4:00-5:00 Sam Law, Dow-Elanco  
*Are You Prepared for a Chemical Spill?*
- 6:00 Pizza party with roundtable discussion

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## Thursday, Feb. 24

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- 8:00-8:30 Tom Olson, Stutsman Co..extension agent  
*Reporting spray drift.*  
*Working with NDSU.*
- 8:00-9:00 Using government agencies as partners.
- 9:00-10:15 Carol Wright, director of senior services in Stutsman and Wells counties
- *Public relations*
  - *Employer/Employee relations*
  - *Dealing with difficult people*
  - *Documentation.*
- 10:15-10:30 Break.
- 10:30-11:30 Mike Wolf  
*Workforce Safety and Insurance.*
- 11:45-12:00 Closing remarks and evaluation.

## Four to attend weed short course

Four North Dakota representatives will participate in the 2005 Western Society of Weed Management Short Course, April 25-28, at Chico Hot Springs Resort in Pray, MT.

Chuck Fettig, Logan County; Monte Dyke, Mountrail County; Stan Wolf, Cass County, and Rachel Seifert-Spilde, North Dakota Department of Agriculture, will attend the annual event.

The course teaches ecologically sound management practices for invasive plants. Lab and field exercises, in addition to classroom sessions, will be used as teaching methods.

## North Dakota State Listed Noxious Weeds

1. Absinth wormwood (*Artemisia absinthium* L.)
2. Canada thistle (*Cirsium arvense* (L.) Scop.)
3. Dalmatian toadflax (*Linaria genistifolia* ssp. *Dalmatica* (L.)
4. Diffuse knapweed (*Centaurea diffusa* Lam.)
5. Field bindweed (*Convolvulus arvensis* L.)
6. Leafy spurge (*Euphorbia esula* L.)
7. Musk thistle (*Carduus nutans* L.)
8. Purple loosestrife (*Lythrum salicaria* L., *Lythrum virgatum* L., and all cultivars)
9. Russian knapweed (*Acroptilon repens* (L.) DC)
10. Saltcedar (*tamarix ramosissima* Ledeb., *Tamarix chinensis* Lour., and *Tamarix parviflora* DC)
11. Spotted knapweed (*Centaurea maculosa* Lam.)
12. Yellow starthistle (*Centaurea solstitialis* L.)

# Invasive Species Workshop Registration Form

Pre-registration is **required** for attendance at the invasive species workshop. Please complete the following form by March 10, 2005; space is limited to **300 participants**. Thanks to the generous donations from our partners (North Dakota Department of Agriculture, North Dakota Game and Fish Department, North Dakota Parks and Recreation Department, North Dakota Weed Control Association, North Dakota Chapter of The Wildlife Society, and the U.S. Fish and Wildlife Service) we are able to offer the 2005 Invasive Species workshop at no cost. Included in the registration are a social, a dinner buffet, and a noon luncheon for conference attendees. The Workshop will be held April 5–7, 2005 at the Best Western Ramkota in Bismarck, ND. **Participation is limited on a first come first served basis – register early.**

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Name

---

Agency or Organization

---

Mailing Address

---

City, State, Zip

---

Phone

---

E-mail address

Do you plan on attending the dinner buffet on April 5<sup>th</sup>, 2005? Y or N? *(Please circle one)*.  
Will others be attending with you? Number? \_\_\_\_\_ *(There may additional costs for those not participating in the workshop)*

Do you plan on attending the luncheon on April 6<sup>th</sup>, 2005? Y or N? *(Please circle one)*.  
Will others be attending with you? Number? \_\_\_\_\_ *(There may additional costs for those not participating in the workshop)*

**Send the completed registration forms to:**

**U.S. Forest Service - Dakota Prairie Grasslands**  
**Lisa Wyckoff**  
**Attn: Invasive Workshop**  
**240 West Century Avenue**  
**Bismarck, ND 58503**

**Or FAX: 701-250-4454**

**Or Email: [lwycckoff@fs.fed.us](mailto:lwycckoff@fs.fed.us)**

For more information on registration, call Lisa Wyckoff or Darla Lenz at 701-250-4443.

**Lodging:** A block of rooms has been reserved at the Ramkota Hotel (800 South 3<sup>rd</sup> Street, Bismarck, ND). Special group room rates will apply (\$55.00 for single occupancy; \$70.00 for double). Call the hotel directly for reservations (701-258-7700). **Reservations must be made by March 7, 2005.** Refer to the *Invasives workshop* to receive reduced rates.

# Calendar

Pesticide Certification and Recertification trainings throughout North Dakota. For more information, contact Andrew Thostenson at (701) 231-7180 or [www.ag.ndsu.nodak.edu/aginfo/pesticid/train.htm](http://www.ag.ndsu.nodak.edu/aginfo/pesticid/train.htm).

Feb. 17-18 – South Dakota Annual Weed & Pest Conference; Ramkota Inn, Aberdeen, SD. For more information, call SDDA at (800) 228-5254.

Feb. 23-24 – NDWCA Weed Officer/Weed Board Seminar; James River Senior Center, Jamestown. For more information, see [www.ndweeds.homestead.com/](http://www.ndweeds.homestead.com/) or contact: Bill Regan at (701) 251-1261 or [wragan@state.nd.us](mailto:wragan@state.nd.us).

March 29-31 – Sheep, Goats, Weeds and Wildlife Meeting; Missoula, MT. For more information, contact Kate Meinig at (406) 243-4903 or [Kate.meinig@forestry.umt.edu](mailto:Kate.meinig@forestry.umt.edu).

April 5-7 – Invasive Species Workshop; Best Western Ramkota, Bismarck. Pre-registration required by March 10; hotel reservations required by April 7 for special rate. For more information, contact Lisa Wyckoff, at (701) 250-4454, or [lwycloff@fs.fed.us](mailto:lwycloff@fs.fed.us) or Darla Lenz at (701) 250-4443.

April 25-28 – Western Society of Weed Science Noxious Weeds Short Course; Chico Hot Springs Resort, Pray, MT. For more information, contact Rachel Seifert-Spilde at (701) 328-2983 or [rseifert@state.nd.us](mailto:rseifert@state.nd.us).

May 24 – NDWCA Spring Sprayer School; Watford City. For more information, contact Derrill Fick at (701) 852-1970 or [wcweeds@ndat.net](mailto:wcweeds@ndat.net), or Odium Heim at (701) 842-4131 or [mcweed@restel.net](mailto:mcweed@restel.net)

May 26 – NDWCA Spring Sprayer School; Fessenden. For more information, contact Derrill Fick at (701) 852-1970, or [wcweeds@ndat.net](mailto:wcweeds@ndat.net), or Richard Maine at (701) 547-3341 or [maine@ndsuxext.nodak.edu](mailto:maine@ndsuxext.nodak.edu)

# Chamomiles

(Continued from Page 4)

introduction of Glean® (chlorsulfuron), landowners had an effective herbicide for false chamomile control. Today, chamomile species can easily be controlled with any sulfonylurea herbicide such as Ally®, Escort®, Cimarron® and Telar®.

Several other members of the “daisy” family, including pineapple-weed [*Matricaria matricarioides* (Less.) Porter], oxeye daisy (*Chrysanthemum leucanthemum* L.), and dog fennel or mayweed chamomile (*Anthemis cotula* L.), can also become weedy. Of these species, oxeye daisy has been the most invasive and is included on several state and provincial noxious weed list

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The author is professor of plant sciences at North Dakota State University, Fargo.

Images credit: Britton, N.L. and A. Brown. [An Illustrated Flora of the Northern United States and Canada](#), 2nd Edition. 1913.

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## Canada thistle research focuses on genetics

Continued from page 3

show us? Plenty, first we can determine if a stand of Canada thistle is all one, or a few, individual(s) connected by a large root system. Such information would be useful in developing an herbicide or biological control agent that could target root growth. Secondly, in discovering the amount of genetic variation within a population, we can hypothesize how populations are growing whether it's through roots (clonal reproduction) or through seeds (sexual reproduction).

Third, in comparing genetic markers between populations we can study how Canada thistle is spreading

across the state and region. Are our roadways serving as corridors through which seeds are easily passing? Is there a connection between populations in natural and agricultural areas? Some populations of Canada thistle have only female plants, yet seed production remains high. Looking at genetic markers may provide information as to the source of pollen for these isolated populations.

In addition to providing clues to the spread of this weed, this information will permit us to compare North American populations (non-native sites) to those in Europe (native sites). In comparing genetic markers from

these locations, we hope to identify locations where potential biological control agents occur. Finally, in later stages of the project, we need to compare genetic marker patterns of weedy thistles to native thistles, to understand how closely related the plants are in order to develop strategies for screening potential biological control agents and herbicides.

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The author is research leader and supervisory plant physiologist at the USDA-ARS Biosciences Research Laboratory in Fargo.

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# Invasive species seminar . . .

Continued from page 1

## **10:20 – 10:50**

Challenges of reconstructing native prairie.

Quantification of Cattail wetland attributes in the Prairie Pothole Region of North Dakota.

## **10:50 – 11:20.**

A summary of cattail management in wetlands used by roosting blackbirds, to alleviate sunflower damage in North Dakota.

## **11:20 – 11:50**

Native grass variety myths and misinformation.

Effects of early application of glyphosate herbicide on control of cattail at two spray volumes.

## **1:00 – 1:30**

Role of soil transformation in invasion on mixed-grass prairie.

Canada Thistle control: what has worked in cropland?

## **1:30 – 2:00**

Habitat invasibility: Concept, measurements, and determinants.

Genetic variability for biological control of Canada Thistle.

## **2:00 – 2:30**

Metsulfuron-methyl and Chlorsulfuron: Combinations that provide postemergence weed control in improved pastures and rangeland.

## **3:00 – Break**

## **3:20 – 3:40**

Need help? Resources to assist your invasive plant management and educational efforts.

National Park Service: Exotic plant management teams.

## **3:40 – 4:20**

Practical and scientific applications of the USDA Rangeland Natural Resources Inventory.

Noxious weed inventory and mapping.

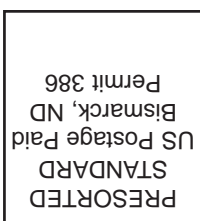
## **4:20 – 4:50**

Native plants for National Parks: An interagency plant materials program.

Friday's presentations include:

## **8:00 – 8:30**

Effects of prescribed fire on invasion of northern mixed-grass prairie in the Des Lacs NWR Complex.



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North Dakota Department of Agriculture  
600 E. Boulevard Ave., Dept. 602  
Bismarck, ND 58505-0020