

The Weed Watch

A Publication of Nebraska Weed Management Coalition (NEWMAC) which includes the Weed Management Areas of Lower Platte, Middle Niobrara Weed Awareness Group (MNWAG), Northeast, Platte Valley, Panhandle Integration for Discovery Education (PRIDE), Sandhills, Southwest and Twin Valley.

FALL 2023

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NAISMA's 31st Annual Conference

By Michelle Huntley
NAISMA Marketing & Membership Manager

The 31st annual North American Invasive Species Management Association (NAISMA) conference is set to take place in Lincoln, Nebraska, from October 16-19, 2023. This year we will be co-hosting the meeting with the Nebraska Invasive Species Council. We are looking forward to an event that will once again bring together professionals from across North America, to share information and best practices on the management of invasive species.

The conference will take place at the Lincoln Marriott Cornhusker Hotel and feature three keynote presentations, along with more than 50 sessions and workshops led by industry experts, as well as a number of networking events. These sessions will span all taxa experiences and will even include sessions with a marine focus. This year's keynote speakers are Dr. Patricia Baiao from Island Conservation, Dr. Janette Davis from Science is Everywhere, LLC, and Platte Basin Timelapse photography.

The NAISMA Annual Conference is open to all professionals who are interested in invasive species management. This includes: natural resource managers, researchers, educators, outreach professionals, students, and young professionals. Ultimately, anyone else who is passionate about protecting our natural resources will find a likeminded community at the NAISMA Annual Conference.

This year's conference features international partners and participation from all levels of government with a specific focus on early detection and rapid response. Join us to learn from leading experts in invasive species management and collaborate in a variety of workshops and training sessions. Share your stories of success fighting invasive species and build community with your fellow invasives fighters. You'll find there's nothing else like this in North America.

Registration for the NAISMA Annual Conference is now open! To register, please visit the conference website: <https://conference.naisma.org/>

FOUNDATIONS FOR SUCCESS

Lincoln, NE - 2023

Todd Boller, Fillmore County Weed Superintendent, is the NAISMA Board Director Member representing Nebraska and is the Co-Chair for Weed Free Products for NAISMA.

Todd said, "We are excited to host the 2023 NAISMA Annual Conference in Lincoln October 16-19. This is one of the best opportunities to learn about

all things invasive. With a title of, "Foundation for Success", NAISMA aims to show that the partnerships that are formed with Weed Management Areas and landowners is the way we have success. Anyone interested in learning and networking with the interest of protecting our lands and waters is welcome and encouraged to attend."

Invasive Grasses, Current and Future Threats

By Cheryl Dunn, Research Manager-Herbarium Curator
Dept. of Agronomy and Horticulture

Grasses are the most widespread plant group on Earth. They have gained traits over time that have made them successful at establishing and spreading. Therefore, in comparison to other plants, grasses are one of the most problematic groups in relation to invasive tendencies. They are also easily dismissed until they become a problem. Invasive grasses often contain little to no forage value and methods to control them have ramifications for other good quality grasses.

Plants can be tough to identify, and grasses are inherently difficult. Grasses have no showy flowers like their wildflower counterparts, and in general, they don't stand out in color and most often each grass type gets lost in a "sea of green". Four characteristics can be utilized to help with identification: height, bloom time, habitat, and location. Invasive grasses can first be distinguished by time of growth, flowering, and longevity. The majority of these grasses fall into the cool-season category which means they are the first to start greening up in the spring and are blooming usually by May. A lot of them are also annuals, so pulling them up is easy because of the lack of an extensive root system, but it also means they are producing a lot of viable seeds.

The most prominent annual, cool-season grasses that currently concern us are cheatgrass and Japanese brome. However, there are several other species that are of greater concern that are just a state away and probably closer than we think since maps and reporting are lacking current information. We do have a report of Rippgut Brome already in the state but so far only from Madison County. Rippgut brome is similar to cheatgrass in that it has some forage quality in the vegetative stage, but that disappears as it matures. The awns are what give away the difference between it and cheatgrass in that they are longer with little, tiny barbs.

Ventenata (Wiregrass) is another annual, cool-season grass that is causing major problems in Wyoming and elsewhere. Like the brome grasses, it can increase the fire frequency, and it forms dense, unpalatable stands. The branches on its flower head are at right angles and they persist making it easier to identify once it has flowered. A later cool-season grass is Medusahead that matures 2-4 weeks after all of these other grasses. While mostly a far western U.S. grass, it is now found in both Wyoming and Colorado. Medusahead can also out-

compete cheatgrass. While this grass can look similar to some of our weedy natives, the flower head does not break apart and has awns of two different lengths.

As for perennial invasive grasses, they have the ability to reproduce not only by seed, but also by rhizomes or stolons.

Most of the aggressive cool-season perennial grasses do have a higher forage value than their annual counterparts; therefore, in certain settings Smooth brome, Kentucky bluegrass, and Tall fescue are allowed to persist.

Quackgrass on the other hand is the most aggressive species, and all of the states surrounding Nebraska have listed it as a noxious weed. This grass can look similar to our native wheatgrasses, but the leaf blades are a little wider and not as stiff. It also likes to be in moist areas, so there is less of a presence in the Sandhills.

Warm-season perennial grasses that invade our warm-season dominated grasslands are of particular concern since timing of treatment can damage our good natives. The non-native Phragmites differs from our native by the roughness of their stems and density of their flowers. Both are found in wet areas and produce extensive rhizomes.

Old World bluestem is also a growing concern in the state because of its ability to masquerade as a native bluestem species and the fact that cattle select against it. Rhizomes and viable seeds make this grass aggressive, and treatment is difficult.

It is important to note that all of these invasive grasses can spread via contaminated hay, water, animal, or human.

If you suspect you have any of these grasses, please reach out to your local County Weed Superintendent.



PHOTO 1:
Medusahead green - Boise, Idaho. Photo courtesy of Matt Lavin.
PHOTO 2:
Medusahead brown - Boise, Idaho. Photo courtesy of Matt Lavin.
PHOTO 3: Rippgut brome versus cheatgrass.
PHOTO 4: Ventenata - Boise, Idaho. Photo courtesy of Matt Lavin.

LOWER PLATTE WEED MANAGEMENT AREA

Project Coordinator - Mike Reed - 402-444-4583
Butler - Max Birkel - 402-367-7446
Cass - Randy Group - 402-234-4104
Coffax - Rod Boss - 402-352-5459
Dodge - Larry Klahn - 402-727-2718
Douglas - Mike Reed - 402-444-4583

Lancaster - Brent Meyer - 402-441-7817
Platte - Mark Borchers - 402-246-2935
Sarpy - Marty Hein - 402-537-6921
Saunders - Ed Sladky - 402-443-8171
Seward - Becky Paulsen - 402-641-8302
Washington - Joshua Nelson - 402-426-6844

Transform Your Rangeland by Eliminating Cheatgrass:

Invasive Annual Grasses Draining Your Bottom Line and Our Ecosystems

By Derek Sebastian and Justin Hossfeld, Envu Range and Pasture

A rancher's most important asset is the healthy rangelands they run their livestock on. Under the stockman's skillful management, cattle will reach their optimal performance grazing on desirable perennial native grasses. However, despite the rancher's best efforts, western Nebraska's rangelands are being slowly degraded by the invasion of non-native annual grasses that outcompete valuable native grasses and ultimately lower a pasture's forage availability and quality. This suite of grasses includes cheatgrass, Japanese brome, jointed goatgrass and bulbous bluegrass.

Invasive annual grasses are exceptionally aggressive, using their early germination and fast growth characteristics to exploit critical soil moisture and nutrient resources before native grasses can access them later in the spring. The resulting soil moisture depletion causes native perennial grasses to be stunted and exist in a state of quasi-drought, and, if left untreated, eventually dying out altogether. To add insult to injury, cattle will not graze cheatgrass and other invasive annuals once they cure out and will avoid parts of pastures where these grasses dominate. The presence of cheatgrass makes cattle much more selective, causing them to overutilize the non-infested areas, which in turn enables the continued spread of cheatgrass in a vicious cycle.

The cost of cheatgrass invasion of rangelands quickly adds up in the form of lost grazing potential and lost weight gain. When compared to healthy, native grass dominated pastures, livestock in cheatgrass dominated pastures would be required to consume an additional 300 pounds of forage per month to make up for the reduced feed quality. Even with the increased consumption, performance still suffers due to decreased forage quality and ranchers are often

required to provide additional livestock supplementation to maintain body condition.

In addition to its negative effects on grazing operations, cheatgrass is also devastating to the environment. With its shallow roots and ability to soak up rains before that moisture reaches perennial plant roots lower in the soil profile, cheatgrass keeps native grasslands in a constant state of drought and increases wildfire risk. Cheatgrass matures early and is very flammable, quickly becoming the fuel that ignites and carries wildfires. Unlike historic prairie wildfires, cheatgrass' burn is rapid and very hot, killing native species and severely impacting grazing operations with lost infrastructure.

More than 10 years ago, Envu Range and Pasture set out for a solution to combat devastating invasive plant species like cheatgrass. Over 125 unbiased research trials for Rejuvra herbicide were conducted at more than eight universities in the western U.S., including Colorado State University, University of Wyoming, University of Nebraska, University of Idaho and Montana State University.

The result? **Rejuvra**, a restoration herbicide featuring a unique mode of action that provides long-lasting control of invasive annual grasses and broadleaf weed species including cheatgrass, Japanese brome, and bulbous bluegrass. This herbicide binds tightly to the organic matter and soil particles within the top soil profile, keeping it well positioned to target annual species without impacting perennial species. Previous herbicides promoted for cheatgrass control suffer from the issue of resolubilizing and leaching down into the soil profile, away from the effective zone to kill cheatgrass. Rejuvra's binding ability in the top portion of the soil profile and resistance to solubilization allows for up to four years of annual grass control while providing excellent tolerance on desirable perennials with roots below the

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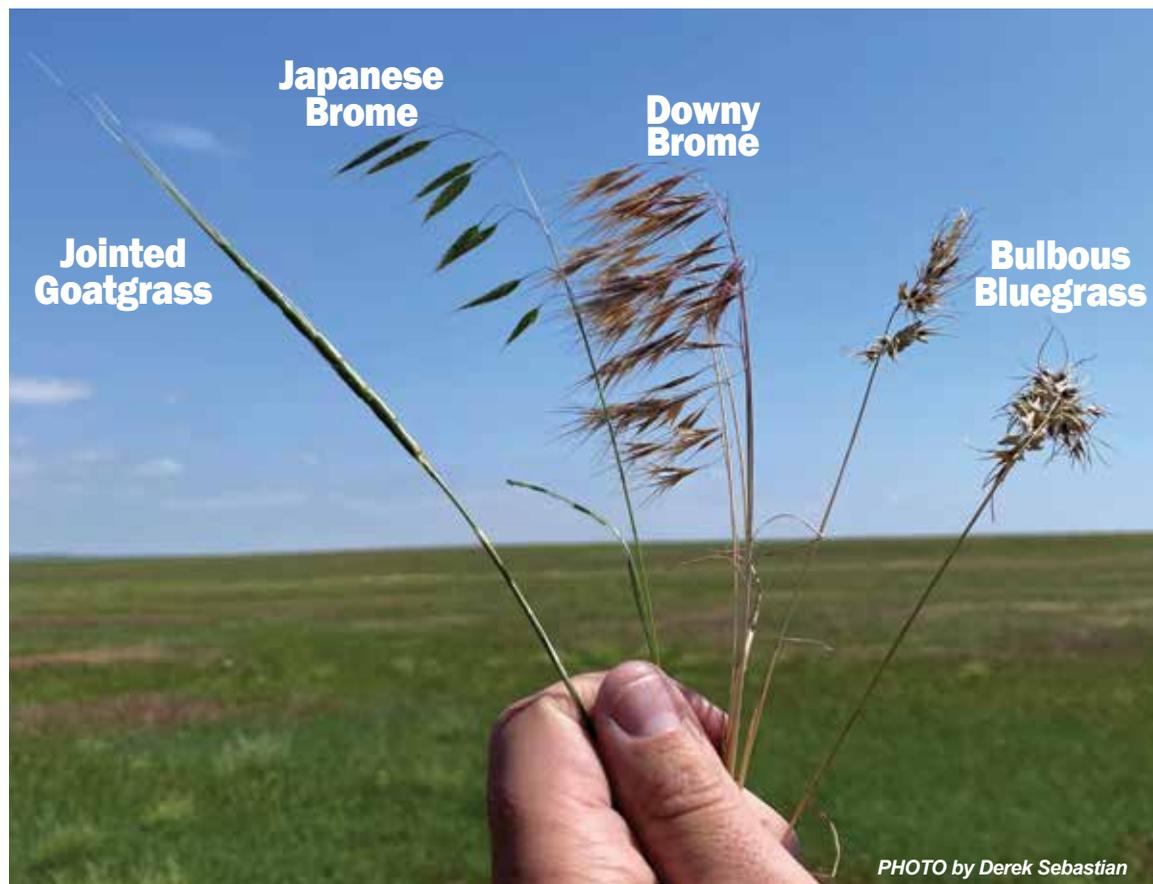


PHOTO by Derek Sebastian

MIDDLE NIOBRARA WEED AWARENESS GROUP

MNWAG Chair - Scott Erthum - 402-760-0093

Cherry - Dave Leonard - 402-322-9136

Rock County - Mitch Dean - 402-925-8255

Brown - Scott Erthum - 402-760-0093

Keya Paha - Kurtis Mizner - 402-382-8173

Transform Your Rangeland

CONTINUED from previous page.

herbicide zone. With Rejuvra's long-lasting residual, it is now possible to deplete the invasive annual grass soil seed bank and increase long-term restoration success.

Real-world trials show that when ranchers eliminate cheatgrass, they see an average of a 3.5 times increase in forage production, reduced feed cost of \$50-\$100 per head and reduced labor costs of \$15-\$25 per head. Making the decision to invest in rangeland for the long term not only saves money on the bottom line but it also offers additional benefits for the environment. When forage quality goes up, livestock consume less, utilize pastures more evenly and reduce grazing pressure on sensitive areas.

Most importantly, eliminating cheatgrass keeps ranching operations financially sustainable by restoring lost forage potential and increasing pasture equity. Healthy, high-performing cattle come from healthy rangelands. Thriving native grasses come from utilizing good grazing practices and controlling cheatgrass, where Rejuvra herbicide offers ranchers a new opportunity to restore their rangelands for future generations.

Cost Share Opportunities: The USDA Natural Resources Conservation Service offers financial assistance on rangeland restoration projects, including invasive weed control. Reach out to your local NRCS field staff to discuss EQIP cost-share opportunities through Practice 315 Herbaceous Weed Management. If you'd like to stay informed and participate in other grant opportunities, contact your Envu Range and Pasture representative Derek Sebastian (derek.sebastian@envu.com).

NORTHEAST WEED AWARENESS GROUP

Northeast Chair - Steve Banks - 402-358-0208

Antelope - Bryan Cornett - 402-887-4659

Boyd - Terri Krysl - 402-394-7139

Cedar - Justin Heikes - 605-933-0433

Dakota - Vacant

Dixon - Mike Elton - 402-635-2129

Holt - Bill Babutzke - 402-340-6319

Knox - Steve Banks - 402-358-0208

Pierce - Brad Elbers - 402-329-6765

Wayne - Doug Deck - 402-565-4458



PHOTOS by Derek Sebastian



Invasive Submersed Aquatic Plants in Nebraska

Kristopher Stahr, Aquatic Invasive Species Program Manager
Nebraska Game and Parks Commission
 kristopher.stahr@nebraska.gov

Nebraska's aquatic natural resources are home to hundreds of native aquatic plants. These plants serve numerous roles including providing habitat for fish and invertebrates, preventing shoreline erosion, and reducing nutrient inputs. However, in the past 20 to 30 years, invasive aquatic plants have continued to spread throughout the United States and Nebraska. While emergent aquatic invasive plants are more well known (e.g., common reed), submersed aquatic invasive plants are becoming a greater problem within the State.

The most widespread invasive submersed aquatic plant in Nebraska is Curlyleaf Pondweed. This plant was once nearly contained in SE Nebraska but is now found statewide. Curlyleaf pondweed can be identified by its "lasagna"-like leaves. Curlyleaf pondweed spreads via both seed and plant fragmentation, making mechanical control difficult. This plant produces "turions," small pinecone-like structures that break off from the mother plant and bury in lake sediment. Curlyleaf pondweed is often the first submersed aquatic plant to start growing in lake ecosystems, often beginning to grow underneath the ice. This plant typically dies back by late May and contributes to algae blooms in lakes in the summer.

Eurasian watermilfoil is a newer invasive aquatic plant in Nebraska that has significantly spread in recent years. Eurasian watermilfoil is now found in lakes statewide. This plant also spreads via seed and fragmentation. Eurasian watermilfoil looks very similar to a native aquatic plant, Northern watermilfoil. Both species have four leaves whorled around the stem, with each leaf containing leaflets. The main difference between these species is that native northern watermilfoil contains less than 10 leaflets per side, while invasive Eurasian

contains more than 10 leaflets, and often more than 12. Eurasian watermilfoil is also characteristically limp when taken out of the water while northern watermilfoil is fairly rigid. Eurasian watermilfoil can grow in depths greater than 20 feet and forms extremely dense stands that make boating and recreating difficult. Eurasian watermilfoil has recently been found to hybridize with the native northern watermilfoil, further complicating management strategies.

The most recent invasive submersed aquatic plant in Nebraska is Brittle Naiad. This plant was detected in the State for the first time in 2021 at Kramper Lake and subsequently in 2022 in Weigand Marina at Lewis and Clark Lake. Brittle Naiad stems are highly branched and fragment extremely easily (hence the name). This plant can grow extremely dense, spreads very easily, and can even outcompete other invasive aquatic plants. In other states, Brittle Naiad has been difficult to control and treat.

Though these species are found primarily in lakes and ponds, they can show up in our streams, rivers and wetlands. If you believe you have found any of these invasive species, please contact the Nebraska Game and Parks Commission's Aquatic Invasive Species program at 402-471-7602 or ngpc.AIS@nebraska.gov.



Brittle Naiad



Eurasian Watermilfoil



CurlyLeaf Pondweed

PHOTOS by iMapInvasives

PLATTE VALLEY WEED MANAGEMENT AREA

Project Coordinator • Rich Walters – 308-390-2511
 Buffalo County • Bret Stubbs – 308-236-1244
 Dawson County • Marty Craig – 308-324-3771
 Hall County • Rob Schultz – 308-385-5097

Hamilton County • Jeremy Brandt – 402-604-0226
 Howard County • Rob Schultz – 308-380-2099
 Keith County • Jamie Moore – 308-464-0092
 Lincoln County • Todd Herndon – 308-532-4939

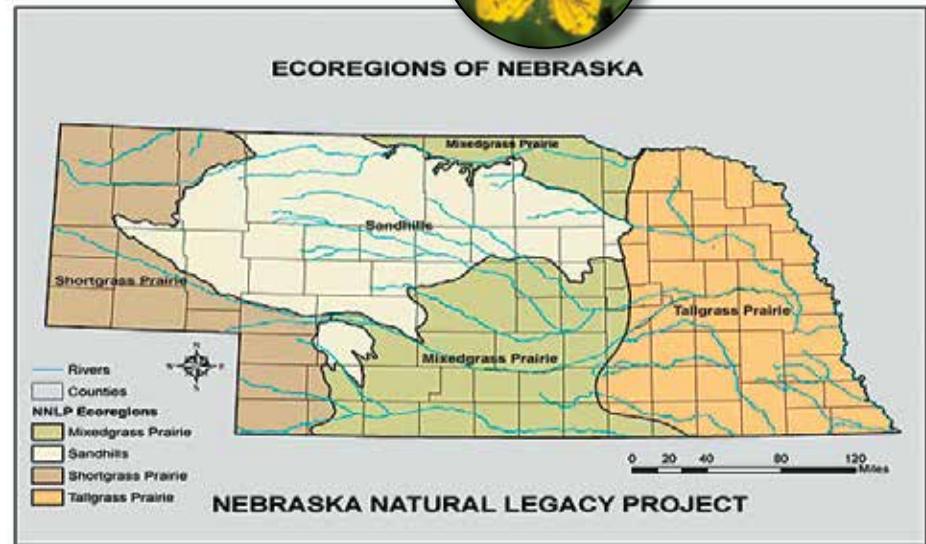
Merrick County • Dean Hartwig – 308-946-2881
 Phelps County • Bobby Hamilton – 308-995-8485
 Polk County • Jim Carlson – 402-747-2921
 Sherman County • Mitch Dzingle – 308-745-1513 Ext 111

Invasive Plants Watch List: 2023



Please visit neinvasives.com to see all invasive species - plant species, aquatic species, insects, and others.

These lists were developed to provide a region-based list of invasive plants to be “on the watch for” in Nebraska. Each ecoregion’s species were categorized based on early detection and rapid response potential.



CATEGORY 1: Future Invasive Species

These 4 plants are the same for all ecoregions in Nebraska, as they pose a significant risk if introduced. The aquatic weeds are just one boat ride away from invading any Nebraska lake.



Giant Reed



Oriental Bittersweet



Medusahead



Flowering Rush

- FLOWERING RUSH
- GIANT REED
- MEDUSAHEAD
- ORIENTAL BITTERSWEET
- PERENNIAL SOW THISTLE
- RIPGUT BROME
- VENTENATA
- YELLOW BEDSTRAW

CATEGORY 2: Shortgrass Prairie Ecoregion

- ABSINTH WORMWOOD
- COMMON AND
- EUROPEAN BUCKTHORN
- DALMATION TOADFLAX
- HENBANE
- HOUNDSTONGUE
- RUSSIAN KNAPWEED
- ST. JOHNSWORT
- YELLOW FLAG IRIS



Absinth Wormwood



Dalmation Toadflax



Houndstongue



Yellow Flag Iris

CATEGORY 2: Sandhills Ecoregion



St. Johnswort



Absinth Wormwood



Sulfur Cinquefoil



Camphorweed

ABSINTH WORMWOOD
 BLACK KNAPWEED
 CAMPHORWEED
 COMMON AND EUROPEAN BUCKTHORN
 COMMON TANSY
 HOUNDSTONGUE
 PERENNIAL SOW THISTLE
 ST. JOHNSWORT
 SULPHUR CINQUEFOIL
 YELLOW BEDSTRAW
 YELLOW FLAG IRIS

CATEGORY 2: Mixed grass Prairie Ecoregion

ABSINTH WORMWOOD
 AMUR HONEYSUCKLE
 AUSTRALIAN BEARDGRASS
 CAMPHORWEED
 COMMON AND EUROPEAN BUCKTHORN
 COMMON TEASEL
 COMMON TANSY
 CUTLEAF TEASEL
 GARLIC MUSTARD
 PERENNIAL SOW THISTLE
 QUEEN ANNE'S LACE
 RUSSIAN KNAPWEED
 ST. JOHNSWORT
 SULPHUR CINQUEFOIL
 WILD PARSNIP
 YELLOW FLAG IRIS



Perennial Sow Thistle



Common and European Buckthorn



Caucasian Bluestem



Common Teasel

CATEGORY 2: Tallgrass Prairie Ecoregion



Cutleaf Teasel



Queen Anne's Lace



Japanese Honeysuckle

ABSINTH WORMWOOD
 AMUR HONEYSUCKLE
 AUSTRALIAN BEARDGRASS
 BLACK KNAPWEED
 COMMON AND EUROPEAN BUCKTHORN
 COMMON TEASEL
 CUTLEAF TEASEL
 FLOWERING RUSH
 GIANT REED
 HOUNDSTONGUE

ORIENTAL BITTERSWEET
 PERENNIAL SOW THISTLE
 QUEEN ANNE'S LACE
 RUSSIAN KNAPWEED
 SICKLEWEED
 ST. JOHNSWORT
 WILD PARSNIP
 WINTER CREEPER
 YELLOW BLUESTEM
 YELLOW FLAG IRIS

The Invasive Plants Watch List also lists which counties in Nebraska have "County Added" noxious weeds. This list is described on page 11 of The Weed Watch.

The complete list of Invasive Plants in Nebraska along with species photos can be found at the Nebraska Invasive Species Project website: neinvasives.com

Yellow Loosestrife Found in Nebraska

By Scott Erthum
Brown County
Weed Superintendent

On June 27, 2023 I was spraying road ditches near Ainsworth in Brown County when I discovered a few small patches of a showy yellow flowered plant I had never seen before. I identified it as *Lysimachia vulgaris*, or commonly known as garden loosestrife or yellow loosestrife. From a quick look at the USDA plant website (www.plants.usda.gov) I learned that this new plant is considered invasive in much of the United States and noxious in 5 states. I forwarded the photos to the Nebraska Department of Agriculture Noxious Weed Office, and they confirmed the identity and said it hasn't been reported in the state before.

Yellow loosestrife is a close relative to purple loosestrife and native to Eurasia and likes similar growing areas. It is a water loving plant growing near streams and bogs. The Brown County plants were growing in a wet ditch. The plant spreads aggressively by seed and underground roots and seeds remain viable for 20 years. The plants may grow up to 6 feet tall and bloom from mid-summer to fall. They have been marketed in the past as ornamental plants.

While it is very pretty, this is an invasive we do not want to spread across the state. If you see it, please contact your county weed control so that it can be dealt with.



PRIDE WEED MANAGEMENT AREA

Sheridan County
Seth Tausan, President
308-327-5629

Banner County
Tim Grubbs
308-631-6888

Box Butte County
Brett Lauder
308-760-3701

Cheyenne, Deuel
& Garden Counties
Cris Burks
308-760-1111

Dawes County
Dan Wordekemper
308-432-3056

Kimball County
Rick Wangler
308-235-2681

Sioux County
Nick Sanderson
308-668-9453

PHOTO CREDITS

Page 1. NAISMA
Page 2. Four Photos of Invasive Grasses, Courtesy of Matt Lavin
Page 3. Photo of Invasive Grasses, Photo by Derek Sebastian
Page 4. Two Rejuvra Before and After Photos, Photos by Derek Sebastian
Page 5. Three Invasive Aquatic Photos, Photos by iMapInvasives
Page 6. Giant Reed, John Ruter, Univ. GA; Oriental Bittersweet, Jill Swearingen USDI NPS; Medusahead, Steve Dewey, USU, Bugwood; Flowering Rush, Leslie Mehrhoff, UConn; Absinth Wormwood, Yellow Flag

Iris, Kristi Paul; Ecoregion Map, Nebraska Game and Parks
Page 7. St. Johnswort, LL Berry, Bugwood.org; Absinth Wormwood & Cutleaf Teasel, Chris Evans Univ. Ill, Bugwood; Sulfur Cinquefoil, Theodore Webster, USDA ARS; Bugwood; Camphorweed, Rebekah D Wallace, Univ. GA; Perennial Sow Thistle, Ohio St. Extension; Common & European Buckthorn, Robert Videke, Doronicum Kft, Bugwood; Caucasian Bluestem, Mike Haddock, kswildflower.org; Common Teasel, Steve Dewey, USU; Queen Anne's

Lace, Rob Rutledge, Sault College; Japanese Honeysuckle, James Allison, GDNR, Bugwood
Page 8. Yellow Loosestrife Photo, Photo by Scott Erthum, Brown County Weed Superintendent
Page 9. Leafy Spurge Photos, Photos by Derek Sebastian
Page 11. Field Bindweed, Woollyleaf Bursage, Howard F. Schwartz, CSU, Bugwood; Bull Thistle, Loke T. Kok, VPI Bugwood; John Cardina, Ohio St. Univ.; Scotch Thistle, Houndstongue, Steve Dewey, Utah St. Univ. Bugwood; Yellow Flag Iris,

Houndstongue, Yellow Bedstraw Kristi Paul, Common Mullein, K George Beck & James Sebastian, CSU; Page 12. Canada Thistle, Rob Routhedge, Sault College, Bugwood.org; Musk Thistle, L.L. Berry, Bugwood.org; Leafy Spurge, Chris Evans, University of Illinois, Bugwood.org; Spotted Knapweed, Catherine Herms, The Ohio State University, Bugwood.org; Plumeless Thistle, Todd Pfeiffer, Klamath County Weed Control, Bugwood.org; Saltcedar, Jessica Spencer, Bugwood.org; Phragmites, Ryan

Armbrust, Kansas Forest Service, Bugwood.org; Diffuse Knapweed, Sara Rosenthal, USDA Agricultural Research Service, Bugwood.org; Japanese Knotweed, Jack Ranney, University of Tennessee, Bugwood.org; Giant Knotweed, Leslie J. Mehrhoff, University of Connecticut, Bugwood.org; Purple Loosestrife, John D. Byrd, Mississippi State University, Bugwood.org; Sericea Lespedeza, Leslie J. Mehrhoff, University of Connecticut, Bugwood.org.

Innovative Pasture Management:

Long-Term Leafy Spurge and Noxious Broadleaf Weed Control

By Derek Sebastian,
Envu Range and Pasture

Land managers and ranchers throughout the west continue to battle invasive noxious weeds and woody (tree/brush) species. These species are problematic because many can be toxic to livestock, reduce forage quantity and quality, and have negative ecological and environmental impacts. Productive and sustainable lands are critical to the agricultural economy and the environment. A few of these noxious broadleaf species include but are not limited to leafy spurge, Canada thistle, common mullein, Dalmatian toadflax, teasel and field bindweed. Many of these invasive species are aggressive, fast-growing and have the ability to quickly invade and become the dominant vegetative species within a few years.

The problem with persistent broadleaf species like leafy spurge, is that with their extensive root systems, tools in the past have not provided a full root kill and sites are quickly reinvaded within 1-2 seasons. High use rate products, like picloram, have been used in the past, although oftentimes annual applications are required to stay ahead of the reinvasion.

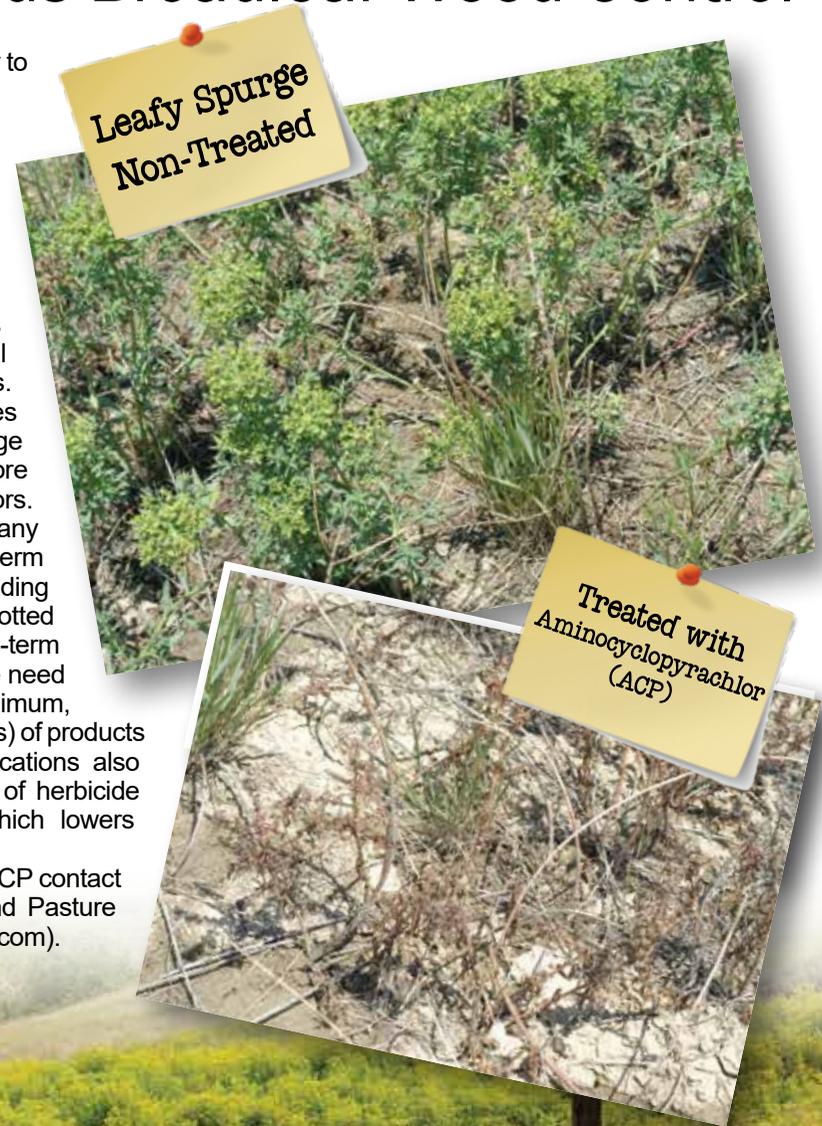
Aminocyclopyrachlor (ACP) is a new active ingredient currently seeking EPA registration for rangeland grazing use and is not yet registered for use on grazed sites. The target product (TruRange) provides residual weed and brush control in one easy-to-use, low-rate product (4-8 oz/acre). With less active ingredients going into the environment,

ACP brings innovation and sustainability to pasture and rangeland management.

ACP has post-emergence and pre-emergence activity, quickly taken up by the leaves, stems and roots of plants and interferes with the hormonal balance necessary for normal shoot and root development. This translocation to the roots provides long-term control of difficult perennial broadleaf weeds and brush species. Management of these unwanted species is necessary to promote perennial forage grasses for livestock grazing and to restore plant biodiversity for wildlife and pollinators.

ACP is highly efficacious for many species for which there are limited long-term chemical control options available, including diffuse knapweed, leafy spurge, and spotted knapweed. Combining effective and long-term control of perennial species reduces the need for repeated applications (or, at a minimum, lengthens the time between retreatments) of products that are not as effective. Fewer applications also reduce both the cost and the amount of herbicide being applied in the environment, which lowers potential environmental exposure.

For more detailed information about ACP contact Derek Sebastian your Envu Range and Pasture representative (derek.sebastian@envu.com).



PHOTOS by Derek Sebastian

SANDHILLS WEED MANAGEMENT AREA

WMA Office -
Janet (Loup Basin RC&D) – 308-346-3393
Tim Conover/Chair – 308-212-2926
Arthur • Dave Hardin – 308-650-0369
Blaine • Dustin Spanel – 308-870-1327

Boone • Jon Lindgren – 402-841-5738
Boyd • Terri Krysl – 402-394-7139
Brown • Scott Erthum – 402-760-0093
Cherry • Dave Leonard – 402-322-9136
Custer • Tim Conover – 308-872-2410

Garfield • Jimmy Petersen – 308-214-0301
Grant • Devan Polt – 308-529-1003
Holt • Bill Babutzke - 402-340-6319
Hooker • Neal Hayward – 308-546-2706
Greeley • Margaret Valladao – 402-917-2121

Keya Paha • Kurtis Mizner – 402-382-8173
Logan, McPherson, Thomas
Richard Cook 308-636-6157
Loup • Zane Young – 308-214-0923
Nance • Chad Borowiak – 308-536-2443

Rock • Mitch Dean – 402-925-8255
Valley • Darrel Kaminski – 308-383-2701
Wheeler • Doug Reiter – 308-654-3397

Cleaning the Sprayer

Reprint from Weed Guide EC130

Herbicide residues in the sprayer can be dissolved by herbicides, solvents and/or adjuvants added to the tank later.

Pesticides may settle to the bottom of the tank if agitation is not adequate. The pesticides also may settle out in the tank, hoses, boom, etc. if the sprayer is shut down. Always end the workday, if possible, with an empty tank. A tank for fresh water mounted on the sprayer will provide water to flush the system in the field and the rinsate can be sprayed on the field of the product's labeled use.

Always keep the sprayer's inside and outside clean. Sprayers with stainless steel booms, which reduce the number of hoses and fittings on the sprayer, are easier to keep clean and have less area for pesticide to build up in the spray booms. Screens and strainers need to be cleaned or replaced. Sumps and pumps along with the inside of the sprayer tank, especially the top and around baffles and plumbing, should be checked.

Select a location to clean the sprayer where any spilled rinsate will not contaminate water supplies, streams, crops or other plants and where puddles will not be accessible to children, pets, livestock, or wildlife.

Preferably the area should be impervious to water and have a wash rack or cement apron with a sump to catch contaminated wash water and pesticides. If such a facility is not available, catch or contain the rinsate and spray the rinse water or the cleaning solution on a field in a manner consistent with the intended use of the agrichemical. Avoid discharging all the cleaning solution in a small area.

The quickest and easiest way to rinse a tank and spraying equipment and dispose of waste safely is to carry a 50- to 100-gallon drum of fresh water with the spraying equipment. When spraying is finished, flush the system in the field and spray the rinsate on the field in a manner consistent with the product's intended use.

If spray material is spilled on the sprayer

during loading or mixing, wash the outside of the sprayer immediately. As a general rule, plastic or polyethylene tanks and hoses tend to require more extensive cleaning than stainless steel tanks. Screens and strainers also should be cleaned or replaced frequently as they can be a major source of contamination. Residues also can accumulate in weather-checked or cracked hoses. Inspect the inside of hoses and replace if necessary. Pay special attention to the following areas that may be missed or difficult to clean:

- sprayer surfaces or components where buildup might occur due to repeated coats of spray followed by drying
- sprayer sumps and pumps
- inside the top of the spray tank and around baffles
- irregular surfaces inside tanks caused by baffles, plumbing fixtures, agitation units, etc.

When going between crops, follow the specific cleanup procedures listed on the label. Some cleanups require special cleaning agents. Sprayer-cleaning agents (see the Nebraska Extension EC130 Guide) should be selected according to the herbicide and formulation to be removed. These agents should penetrate and dissolve pesticide residues which will be removed in the rinsate. Commercial tank cleaning agents are generally preferred because they do a better job than household detergents and can deactivate some herbicides. Following is the spray cleanout procedure listed in University of Missouri publication G4852, Cleaning Field Sprayers to Avoid Crop Injury, available on the Web at muextension.missouri.edu/xplor/agguides/crops/g04852.htm.

This procedure is recommended for all herbicides unless the label specifies a different cleanout procedure. With sensitive crops the best method to avoid herbicide injury from residual in the tank, is to use a separate sprayer for the crops. When some herbicides, such as glyphosate, are left in the tank for a period of time, they absorb products such as Banvel, Clarity or Sterling Blue and hence crop injury can result.

1

1. Add one-half tank of fresh water and flush tanks, lines, booms, and nozzles for at least five minutes using a combination of agitation and spraying. Rinsate sprayed through the booms is best sprayed onto cropland for which the pesticide is labeled to avoid accumulation of pesticide-contaminated rinsate.

Thoroughly rinse the inside surfaces of the tank, paying particular attention to the surfaces around the tank fill access, baffles, and tank plumbing fixtures. The use of a 360-degree nozzle, such as the TeeJet Model 27500E-TEF rinsing nozzle, permanently installed to the spray system can automate the cleaning of tops and sides of the tanks. Several nozzles may need to be carefully positioned to clean tanks with baffles. Pressure sprayers are useful for removing caked-on internal and external residues. Hot water can increase penetration of dried residues, but adding a hot water rinse may cause unacceptable health hazards due to the vapors produced. Carefully review labeled safety precautions for the agrichemicals and cleaning products used.

2

2. Fill the tank with fresh water and the recommended cleaning solutions or a commercially available tank cleaner and agitate the solution for 15 minutes. To make a cleaning solution, add one of the following to each 50 gallons of water:

- 2 quarts of household ammonia (let stand in sprayer overnight for growth regulator herbicides such as 2,4-D or dicamba), or
- 4 pounds of trisodium phosphate cleaner detergent.

Operate the spray booms long enough to ensure that all nozzles and boom lines are filled with the cleaning solution. Let the solution stand in the system for several hours, preferably overnight. Agitate and spray the solution onto areas suitable for the rinsate solution, according to label instructions.

3

3. Add more water and rinse the system again by using a combination of agitation and spraying. Remove nozzles, screens, and strainers and clean separately in a bucket of cleaning agent and water.

4. Rinse and flush the system once again with clean water.

SOUTHWEST WEED MANAGEMENT

Project Coordinator	Chase County	Dundy County	Frontier County	Hayes County	Hitchcock County	Perkins County	Red Willow County
John Rundel 785-443-0646	Brandon Beard 308-882-7520	Tony Lutz 308-423-2058	David Luke 308-367-8304	Boyd Gigax 308-286-3461	Bill Hagemann 308-334-5852	Michael Dolezal 308-352-7955	Josh Mullen 308-345-4333

TWIN VALLEY WEED MANAGEMENT AREA • TWINVALLEYWMA.COM

Coordinator	Adams County	Clay County	Fillmore County	Franklin County	Furnas County	Gosper County	Harlan County	Kearney County	Nuckolls County	Thayer County	Webster County
Zach Jones 402-746-3560	Eric Walston 402-461-7173	Greg Shuck 402-762-3652	Todd Boller 402-366-1921	Doug Eckhardt 308-746-4022	Todd Weverka 308-268-2824	Marty Craig 308-324-3771	Tim Burgeson 308-928-9800	Joseph Anderson 308-832-2854	Nick Elledge 402-879-1900	Brian Schardt 402-365-4366	Brian Pedersen 308-470-1603

COUNTY-ADDED NOXIOUS WEEDS



Kristi Paul, PRIDE Board Member.
 In addition to the twelve weeds that have been declared noxious in Nebraska, every county has the option to petition the Director of the Department of Agriculture to place additional weeds on the "County-added noxious weed" list. Many counties in Nebraska have County-added noxious weeds, which landowners are required to control.



FIELD BINDWEED
 Banner
 Box Butte
 Cheyenne
 Deuel
 Garden
 Morrill
 Scotts Bluff
 Sheridan

5 to 6 feet long.
 Perennial - spreads
 by
 seeds and
 rhizomes.



**COMMON
 TEASEL**
 2-8 ft tall
 Lancaster
 Pawnee
 Saline
 Biennial -
 spreads
 by seed.



HOUNDSTONGUE | 1 to 4 feet tall. Biennial -
 Dawes
 spreads only by seeds.
 Sheridan



**SCOTCH
 THISTLE**

Banner
 Cheyenne
 Dawes
 Morrill
 Kimball
 Scotts Bluff
 Sheridan
 Sioux

1 to 10 feet tall.
 Biennial - spreads
 only by seeds.

**CUTLEAF
 TEASEL**
 2-6 ft tall
 Lancaster
 Pawnee
 Saline
 Biennial -
 spreads by
 seed.



**YELLOW
 FLAG IRIS**

Lincoln County
 3-5 feet tall.
 Perennial- Forms
 dense stands.
 Reproduces
 by seed and
 rhizomes.



**COMMON
 MULLEIN**
 Cheyenne
 County

1 to 7 feet tall
 Biennial-spreads
 only by seeds.



BULL THISTLE
 Rock
 1.5 to 6.5 feet tall.
 Biennial - spreads
 only by seeds.



**WOOLYLEAF
 BURSAGE**
 Banner

1 to 2.5 feet tall.
 Perennial -
 spreads by
 seeds and
 rhizomes.



**PERENNIAL
 YELLOW
 BEDSTRAW**
 Cherry
 2 to 4 feet tall.
 Perennial -
 spreads by
 seeds and
 rhizomes.

NEBRASKA'S NOXIOUS WEEDS

It is the duty of each person who owns or controls land to effectively control noxious weeds on such land.

Noxious weed is a legal term used to denote a destructive or harmful weed for the purpose of regulation. The Director of Agriculture establishes which plants are noxious. These non-native plants compete aggressively with desirable plants and vegetation. Failure to control noxious weeds in this state is a serious problem and is detrimental to the production of crops and livestock, and to the welfare of residents of this state. Noxious weeds may also devalue and reduce tax revenue.



HEIGHT 1-3.9 FT.

Canada Thistle



HEIGHT 1.6-9.8 FT.

Musk Thistle



HEIGHT .3-2.6 FT.

Leafy Spurge



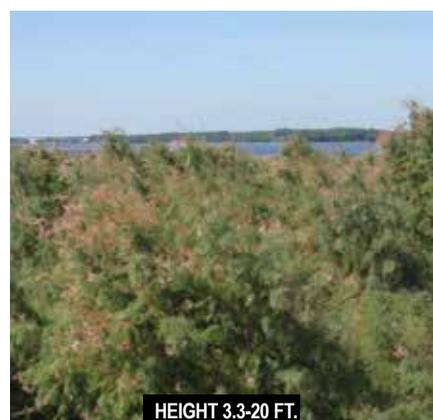
HEIGHT 1-3.9 FT.

Spotted Knapweed



HEIGHT 1-4.9 FT.

Plumeless Thistle



HEIGHT 3.3-20 FT.

Saltcedar



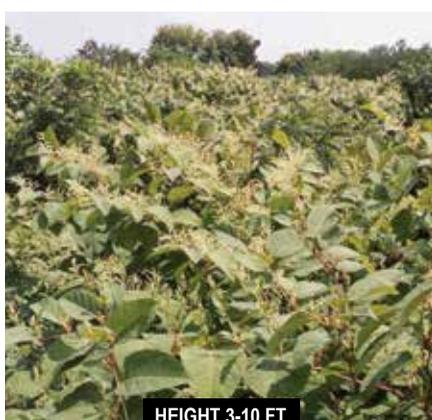
HEIGHT 3.2-20 FT.

Phragmites



HEIGHT 1-3.9 FT.

Diffuse Knapweed



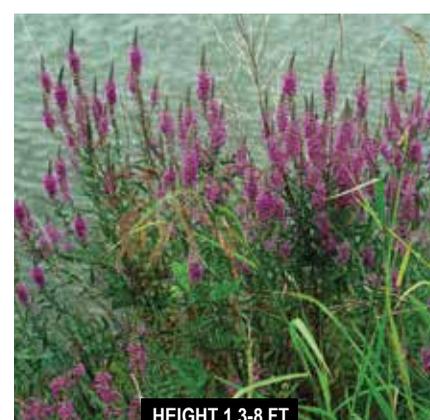
HEIGHT 3-10 FT.

Japanese Knotweed



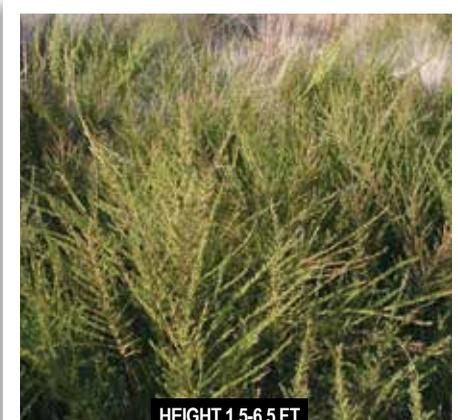
HEIGHT 8-13 FT.

Giant Knotweed



HEIGHT 1.3-8 FT.

Purple Loosestrife



HEIGHT 1.5-6.5 FT.

Sericea Lespedeza