

The Weed Watch



A Publication of Panhandle Research Integration for Discovery Education Weed Management Area in conjunction with High Plains, Sandhills, West Central, Platte Valley and Twin Valley Weed Management Areas and the Middle Niobrara Weed Awareness Group

FALL 2017

Where Do All These Weeds Come From?

By Rod Stolcpart, Rock County Weed Superintendent

Every year there always appears to be a new weed or two that show up as if they just appeared out of nowhere. State mandated noxious weeds will continue to grow and prosper every year. But just when we aren't looking, a new invasive plant will show up unannounced. We know that many weeds are spread by nature through wind or water. In today's busy world, people and animals, whether through recreation, agriculture, or general travel aid in the spread of new invasive plants. Most of our noxious and invasive weeds originate in Europe. They were transported here in many ways and for many reasons, such as ornamental garden plants, in the ballast on ships, or as seeds in various ways. They bring along no natural controls that could help keep them from spreading rapidly. That's why we refer to them as non-native, and invasive.

YELLOW FLAG IRIS



Yellow flag iris was thought to be just another pretty flower until it started moving across the state. During the recent tour of PRIDE WMA's project at Agate Fossil Beds national monument and on private land downstream, we learned that the original clump of yellow flag iris was planted as an ornamental on the Cook Ranch in the early 1900's. Whether alteration of the river flow by nature or by manmade bridges, the yellow flag iris now crowds out native vegetation and has formed a monoculture in some areas along the Niobrara River in Sioux County. Other weed management area groups are now paying more attention to yellow flag iris.

While small patches are known to grow in several areas across the state, most are not thought to be invasive, or overly aggressive. After seeing the spread of yellow flag iris on the Niobrara River in Sioux County, weed professionals realize that we need to monitor yellow flag iris in all areas, to be sure it does not get out of control.

Where did it come from?

Yellow flag iris (*Iris pseudacorus*) is native to Europe and the British Isles, North Africa and the Mediterranean region. It was brought to Canada and the United States as an ornamental plant in the early 1900s; it has also been used as an erosion control plant, used in sewage treatment, and as a dye and fiber plant. This pretty but invasive plant continues to be sold and planted as an ornamental.

Ramey, Victor. "Iris pseudacorus." <https://plants.ifas.ufl.edu/plant-directory/iris-pseudacorus/>.



ABSINTH WORMWOOD

After hearing about absinth wormwood for a few years I had a chance to get up close and personal with the plant while on the Leafy Spurge Task Force tour held last year north of Johnstown, Nebraska. That very unique silvery gray green color will make you take a second look. And please take that second look, you do not want this invasive plant growing on your property. Livestock avoid absinth wormwood, but if forced to eat it, all parts of the plant are toxic. Most of the new infestations have been found on roadsides, or on farmsteads where livestock is fed, or where hay is fed or stored. Since realizing what absinth wormwood is, it has now been identified in Blaine, Brown, Clay, Custer, Dawes,

Dixon, Fillmore, Holt, Knox, Loup, Sheridan and Thomas counties in Nebraska. Many of the infestations are growing where folks purchased out of state hay after the 2012 drought, as well as where the trucks that hauled the hay are parked. Other infestations are being found on county and state roads and around ponds.

Where did it come from?

Absinth wormwood (*Artemisia absinthium*) is a native of Eurasia, the Middle East, and North Africa. It was introduced to North America in the early part of the 19th century to be cultivated for medicinal and social uses, and was first reported outside cultivated gardens in 1841, along roadsides. Traditional medical use of wormwood was believed to stimulate the appetite and relieve indigestion. Absinth wormwood is an ingredient in the spirit or liquor, absinthe, and is used for flavoring in some other spirits and wines, including bitters, vermouth, and pelinkovac.

Evans, J. E. and Nancy Eckard. "Artemisia absinthium." [https://wiki.bugwood.org/Artemisia_absinthium.Committee.on.Herbal.Medicinal.Products.\(CHMP\).http://www.ema.europa.eu](https://wiki.bugwood.org/Artemisia_absinthium.Committee.on.Herbal.Medicinal.Products.(CHMP).http://www.ema.europa.eu).

POISON HEMLOCK

I've always felt that any plant that has a name that starts with "poison" should be something we use caution with, such as poison ivy and poison oak. Poison hemlock is a non-native invasive plant that seems to be invading more acres across the state every year. All parts of this plant are considered poisonous to both humans and animals. Poison hemlock thrives in disturbed areas, along road ditches and riparian areas. It can be found in the same habitats as water hemlock, which is a species native to North America. For help with identification, contact your local county weed superintendent.



Where did it come from?

Poison hemlock (*Conium maculatum*) is native to Europe and North Africa. It was introduced to North America in the 1800s as a garden plant, marketed as being a "winter fern" and for its attractive white flowers. In ancient Greece, hemlock was used to poison condemned prisoners. The most famous victim of hemlock poisoning is the philosopher Socrates. After being condemned to death for impiety and corrupting the young men of Athens, in 399 BC, Socrates was given a potent infusion of the hemlock plant. Hemlock was also historically used as a medicine. As a medicine, it has sedative and antispasmodic properties and was used by Greek and Arab physicians for a variety of maladies including joint pain. It was used with extreme caution since there is a fine line between medicine and poison and an overdose likely meant paralysis or death.

Reeves, Kelly. "Exotic Species: Poison Hemlock." <https://www.nps.gov/articles/poison-hemlock.htm>.

I could go on and on about many weeds that are invasive and toxic to humans or livestock. My take home message to you is this; if you notice a "plant out of place" on your property, or on a local roadside, and you do not know what the plant is, make it your mission to find out all of the information you can about it. Many plants we may refer to as weeds are native, unique and beneficial, so identification is important. By learning more about species and what impacts they may have, you will be better able to answer the question...

"Where do all these weeds come from?"



Platte Valley Weed Management Area Update

By Charles Brooks, PVWMA President

During 2017, The Platte Valley Weed Management Area (PVWMA) continues work to control invasive plants within our WMA counties on the central Platte River. In dealing with invasive plants such as phragmites and purple loosestrife, our group has realized that total control is not an economical or feasible achievement. What is achievable is working to control large infestations, continued treatment of new infestations and treatment of infestations in sensitive locations. In addition to controlling the invasive plants, we must consider the loss of native plants and trees on the islands and banks of privately owned land. It is the duty of landowners to control noxious plants on their property; therefore, the terrain, available control methods, and plant species physiology must be examined. It has taken several years for noxious weeds such as purple loosestrife and phragmites to become established and crowd out native plants. Realistically, we know that it will take several years and continuous effort to reduce them. Cooperation by landowners is also a necessary and ongoing process. PVWMA works to educate the public about the economic impacts of noxious and invasive plants. These impacts can vary, from decreased forage on rangeland, decreased quality of riparian areas that can impact both recreational and agricultural uses, and the creation of low quality wildlife habitat caused by invasive species pushing out native plant species.

The PVWMA received a grant of \$211,000 in 2016 from the Department of Agriculture's legislative fund for control efforts in the fall of 2016 and spring of 2017. 80% of the grant was used to spray areas of the Platte River. During the summer season, the Platte River provides irrigation water to local landowners, which limits the herbicide selection we have available to control phragmites and purple loosestrife.

The window of opportunity between irrigation turn off and a killing frost can make herbicide application a challenge.

In 2017, PVWMA also received \$187,000 from the Nebraska Department of Agriculture's Riparian Vegetation Management Grant. The Nebraska legislature has provided this funding to assist grant projects for invasive plant control on rivers throughout the state. This money, along with funds from the Nebraska Environmental Trust, Nebraska Public Power District, Central Platte NRD, Central Nebraska Power & Irrigation District, Platte River Recovery Program and others will enable us to continue to bring a helicopter and an airboat contractor to the river for control work. Control efforts will continue on old infestations of phragmites and purple loosestrife, along with newly emerging infestations.

The Nebraska Weed Management Coalition (NEWMAC), recently received funds (\$75,000) from the Riparian Vegetation Management Fund to help with species monitoring. Collaborating WMA's, including PVWMA, will use these funds to monitor the rivers for new invading plants, release biological-control insects on purple loosestrife, and provide for landowner education. This is a proactive process to prevent new invasive plants from becoming established like phragmites or purple loosestrife has in previous years.

PVWMA is committed to continue monitoring and restoring the section of the Platte River within our WMA. We thank all of our supporting partners and contractors for their dedication.

WEST CENTRAL WEED MANAGEMENT AREA

Arthur County Kent Anderson 308-764-2203	Keith County Tim Ryan 308-284-6601	Lincoln County Todd Herndon 308-532-4939	Logan/McPherson County Richard Cook 308-636-6157
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PLATTE VALLEY WEED MANAGEMENT AREA

Project Coordinator Rich Walters • 308-390-2511	Howard County • Rob Schultz – 308-380-2099
Buffalo County • Bret Stubbs – 308-236-1244	Merrick County • Kevin Koziol – 308-536-2523
Dawson County • Marty Craig – 308-324-3771	Phelps County • Charles Brooks 308-995-6688
Hall County • Rob Schultz – 308-385-5097	Polk County • Jim Carlson – 402-747-2921
Hamilton County • Brian Crabtree – 402-694-3666	Sherman County • Mitch Dzingle 308-745-1513 Ext 111



Before control efforts started, non-native phragmites had severely infested the Platte River within the PVWMA

Value of Milkweed

By Michael Klosterman,
Farm Bill Wildlife Biologist, Pheasants Forever

When considering the value of milkweed, one must examine what actually defines the label. Milkweed is a general term and the common name for plants that belong to the genus *Asclepias*. It is often suggested that milkweeds are introduced, invasive plants from Europe, which they are not. There are 72 milkweed species native to the U.S. and Canada, at least 37 of which are found in the west. (Fallon, C. et al. 2015).

Milkweed has often been targeted as an agricultural pest, especially in corn and soybean production, where it grows at the same time as those crops. New milkweeds will behave as successional plant that can establish after ground disturbance. The use of Roundup Ready technology in corn and soybeans has significantly reduced or eliminated the presence of milkweed in these crop fields. In our western Nebraska wheat fields, conventional tillage, as well as no-till systems with effective herbicide use, has virtually eliminated the presence of milkweed in wheat/fallow systems. The definition of a weed by Merriam-Webster is simply a plant that is not valued where it is growing and is usually of vigorous growth; especially one that tends to overgrow or choke out more desirable plants. That being said, it is obvious that with modern technology and principles, milkweed is certainly not as competitive as it possibly once was in our agricultural production.

Observations show that native ranges and pastures are certainly not overrun with large patches of aggressive milkweed populations. Once again, milkweed typically thrives on disturbed sites, where grass competition is relatively light. With sound grazing management that protects from overgrazing, milkweed will have a difficult time competing with well-established grasses. After natural disturbances, milkweed may be observed making a presence in these areas, but generally falls back as grasses re-establish.

So where do we commonly see well established patches of milkweed? County roadsides. The poor gravelly soil along roads that are routinely disturbed by road graders make a good medium for milkweed, and not for grass. Often times, it is observed that roadsides are in fact the only areas where we can still have healthy patches of valuable milkweed.

So, what is the value of milkweed? Despite the historical value of the plants for medicinal and fiber purposes to Native Americans, milkweed is absolutely critical to the survival of the monarch butterfly. Plants of the genus *Asclepias* are the only viable host plant for this iconic butterfly. Adults lay eggs on milkweed and the emerging caterpillar feeds exclusively on the plant. **Without milkweed, monarchs cannot complete their life cycle. So no milkweed, no monarchs, it's that simple.**

Why such a concern for the monarch? Because population measurements of migratory monarchs east of the Rocky Mountains has shown a steady decline since the late 1990's. Not only in decline, but a catastrophic population low measured in 2014 showed an 82% drop from the 21-year population average (SEMARNAT 2015). The butterfly has even been suggested to be listed on our threatened and endangered species list due to this steep

decline. Certainly there are many factors that can influence the population of Monarchs, but our effective removal of milkweed in our agricultural production has definitely played a significant role. Without milkweed populations along roadsides, immense areas could be devoid of the plant.

Additionally, it is not all just about the monarch caterpillars. Milkweed blooms produce high amounts of nectar. Not only do adult monarchs feed on the blossoms, but so do many other nectar seeking butterflies and moths. Another species of concern, the regal fritillary butterfly, often relies on milkweed for a nectar source. Native bees such as bumble bees and sweat bees routinely feed on milkweed, as do honey bees. Hummingbirds even get in on the action and can be seen feeding on milkweeds. Other bird species will also use parts of the plant for nesting material.

So the next time you see a patch of milkweed along a roadside or in an area that it is not competing with valuable commodities, consider the following. Imagine the sheer number of species that will visit that plant over the course of its lifetime. Sentencing that patch to death could have a chain reaction that can ultimately reduce the populations of some of Nature's most unique and beautiful creatures.

Creatures that often have beneficial effects on the very agricultural commodities we are protecting and relying on ourselves.



HIGH PLAINS WEED MANAGEMENT AREA

Coordinator
Joyce Mick
308-633-1264

Banner County
Cris Burks
308-760-1111

Cheyenne County
Cris Burks
308-760-1111

Deuel County
Cris Burks
308-760-1111

Garden County
Cris Burks
308-760-1111

Kimball County
Rick Wangler
308-235-2681

Morrill County
Cody Renkosi
308-262-0372

Scotts Bluff County
Jeff Schledewitz
308-436-6709

Sioux County
Nick Sanderson
308-668-9453

Other At-risk Pollinators In Nebraska

By Erin Divine, Wildlife Biologist,
Bird Conservancy of the Rockies

Monarchs are not the only species of pollinator in need of conservation in Nebraska. Nebraska's state wildlife action plan, The Nebraska Natural Legacy Plan, identifies at least 18 insect pollinators that are considered at-risk in Nebraska. These insects, including butterflies, moths, and bumble bees, are beneficial not only because they are part of the state's native biodiversity but also because these pollinators are providing valuable ecosystem services.



WHAT YOU CAN DO TO HELP

MONARCHS AND OTHER POLLINATORS

- **PLANT MILKWEED.** Nebraska has 17 different milkweed species. Planting any of these, even in small quantities, will provide the necessary habitat for monarchs.
- **DECREASE PESTICIDE AND HERBICIDE USE.** Although some pesticides are helpful, they can also harm many native insects like monarchs.
- **MAINTAIN HEALTHY NATIVE PLANT COMMUNITIES.** Monarchs need more than just milkweed. Adult monarchs feed on nectar from a variety of flowering plants and need sources of nectar throughout the entire growing season.
- **REDUCE OR MODIFY ROADSIDE & RIGHT-OF-WAY MOWING & HAYING REGIMENS.** Modifying mowing and haying regimens or timelines can provide needed hay while also providing for monarch life cycles and migration routes.
- **DONATE TO MONARCH AND POLLINATOR CONSERVATION GROUPS.** Donations provide funding for research, habitat work and education.
- **PLANT POLLINATOR GARDENS AND PROVIDE NESTING SITES FOR OTHER POLLINATORS.**

• **CITIZEN SCIENCE.** There are several citizen science projects you can participate in to help monarchs and other pollinators including the following:

- Milkweed Watch, <http://milkweedwatch.unl.edu>
- Monarch and Regal Fritillary Surveys, <http://outdoornebraska.gov/butterflysurvey>
Fallon, Candace, B. Borders, E. Lee-Mader, and S. Hoffman Black. 2015. "Milkweeds and Monarchs in the Western U.S.". Available at <https://monarchjointventure.org> (accessed 15 August 15, 2017).

SEMARNAT (Secretariat of Environment and Natural Resources, Mexico). 2015.



Pictured above is cedar tree removal on Dennis Dunn Property, south of Bloomington, NE.

TWVMA Implements Cedar Tree Cutting Program

By Merle Illian, Project Coordinator

The Twin Valley Weed Management Association (TWVMA) has begun a cost share assistance program for cutting invasive eastern red cedar trees. The project area consists of the riparian woodlands and grasslands associated with the Republican River, from Cambridge to the Kansas-Nebraska state line south of Hardy, Nebraska. Areas eligible must be within one half mile of the Republican River or within one half mile of a perennial or intermittent stream, which provides significant water flow and empties into the Republican River.

"Cedar trees are sucking up sunlight and groundwater at the expense of other plants, and creating headaches for landowners along the Republican River," says cattle producer John Haussermann of Republican City, Nebraska. "We have recently cut eastern red cedar trees on 2,500 acres of rangeland on my ranch in Franklin County, Nebraska, and it is amazing how it has increased the flow of the spring water within the creek channel. Cedar trees are worthless," says Haussermann. "You can have hundreds of different kinds of plants or you can have cedar trees. But you can't have both."

Cost share payments will be made at 50% of an hourly rate (not to exceed \$85 per hour) for contractual work, with a maximum of \$3,000 being paid per cooperator. No matching funds from another program will be allowed. Work must be completed by June 30, 2018. The landowner is also required to control all cedar growth on these acres for the next 10 years.

For the past 12 years, all manpower and funding has been focused directly on the river channel of the Republican and Little Blue Rivers within the TWVMA. "The red cedar are spreading rapidly, consuming huge areas of productive rangeland and threatening many of the native prairies and woodlands," says Dennis VanWey, Chairman of the TWVMA Committee. "Removal of these trees will definitely increase water flows within the intermittent and perennial streams. This work will definitely complement our primary objective of putting more water into the Republican River."

Cost sharing funds are being provided by the Nebraska Environmental Trust Grant Program. For more information, you can contact the TWVMA office by calling 402-746-4558.

TWIN VALLEY WEED MANAGEMENT AREA

Coordinator Merle Illian 402-746-3560	Adams County Eric Walston 402-461-7173	Clay County Bruce Rumsey 402-762-3652	Fillmore County Todd Boller 402-366-1921	Furnas County Todd Weverka 308-268-2824	Gosper County Marty Craig 308-324-3771	Harlan County Tim Burgeson 308-928-9800	Kearney County Joseph Anderson 308-832-2854	Nuckolls County Nick Elledge 402-879-1900	Thayer County Brian Schardt 402-365-4366	Webster County Dennis VenWay 402-746-2890
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PRIDE Weed Management Area Hosts Leafy Spurge Task Force Tour and Conference

By Kristi Paul,
Sheridan County Weed Superintendent

Chadron, Nebraska was the site for the 30th Annual Leafy Spurge Task Force (LSTF) Tour and Conference on Tuesday and Wednesday, July 25th -26th, 2017. Over sixty attendees arrived for the meeting, which included both a field day and day of presentations. The tour included multiple stops throughout Dawes County to see various projects, from long-term management results to different management techniques. The first stop at historic Fort Robinson State Park included a look at ongoing management efforts of Scotch thistle and a common mullein biological control release site. The next stop on the tour was the Nebraska Game and Parks Commission's rugged Ponderosa Wildlife Management Area. At the Ponderosa, we saw a demonstration of Midwest Vegetation Management's unmanned aircraft (drone) and how it can be used for mapping invasive weeds in rough terrain or inaccessible areas. In addition, the Nebraska Game and Parks staff described some of their forest management and weed control practices. The tour at the Ponderosa also included a scenic drive along the Rim of the World road through the wildlife management area. The group was able to see the impacts of the 2012 fires on the landscape; how some of those areas are slowly recovering, while others have been permanently changed. The tour concluded with a chance to enjoy The Museum of the Fur Trade located just east of Chadron.

The evening of the 25th, PRIDE hosted a steak dinner at the Dawes County Fairgrounds for the

attendees. Donations from Bayer Integrated Vegetation Management, Dow AgroSciences, Alligare and Van Diest Supply helped pay for the meal. Thank you to the sponsors.

Wednesday morning's conference included a full house at the Dawes County 4-H building. Speakers and topics included Steven Rolfsmeier, CSC Botanist and Professor, The Biogeographical Movement of Native Sandhill Plants; Scott Guffey, Pennington, County SD Weed and Pest Supervisor, Overview of Projects and Events in South Dakota; Dr. Dirac Twidwell, Rangeland Ecologist/UNL Professor and UNL Graduate Student Dillon Fogarty, Assessment of Invasive Species Impacts; and Jason Rust of Midwest Vegetation Management with Mapping Applications Using a Drone. Midwest Vegetation Management donated the grand prize of a Cabela's cooler, which was won by Bill Babutzke of Holt County.

Upon conclusion of the conference, several folks from across the state were able to participate in an additional tour of Agate Fossil Beds National Monument (AFBNM) with Sioux County Weed Control personnel. This included seeing the continued progress being made on PRIDE's yellow flag iris control project with AFBNM and private land downstream. AFBNM Superintendent, James Hill, visited with the group about the project, and the relationship it has created with PRIDE. PRIDE would like to thank all that took the time and effort to attend this year's anniversary meeting. We would also like to thank the individuals and sponsors who helped make this meeting possible.



This site at Fort Robinson State Park was once completely covered in Scotch thistle. Following several years of control efforts, very few Scotch thistle are present



The Nebraska Game and Parks Commission's Ponderosa Wildlife Management area is starting to recover, following the fires of 2012



Dr. Dirac Twidwell talks with conference attendees about an assessment of invasive species impacts.

PRIDE WEED MANAGEMENT AREA

Box Butte County
Cody Renkoski
308-203-1454

Dawes County
Dan Wordekemper
308-432-3056

Sheridan County
Kristi Paul
308-327-5629

Sioux County
Nick Sanderson
308-668-9453



NEBRASKA
Good Life. Great Roots.
DEPARTMENT OF AGRICULTURE

PHOTO CREDITS

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Kristi Paul
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Rich Walters, The Nature Conservancy
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monarch caterpillar and monarch, Mike Klosterman, Farm Bill Wildlife Biologist, Pheasants Forever; showy milkweed, Shelley Steff, monarch, Erin Divine
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Regal fritillary: Pennsylvania Army National Guard; Dotted Blue, Howard Ensign Evans, Colorado State University, Bugwood.org; Merle Illian, TWVMA

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Wilfredo Robles, MSU, Bugwood.org - common water hyacinth
Jill Swearingen, USDI NPS, Bugwood.org - oriental bittersweet
Scott Robinson, GDNr, Bugwood.org - giant salvinia
Steve Dewey, USU, Bugwood.org - black herb/bane/Russian knapweed/
perennial pepperweed
Catherine Herms, TOSU, Bugwood.org - goat's rue
Troy Evans, GSMNP, Bugwood.org -

brittleleaf naiad
Robert Vidéjki, Doronicum Kft., Bugwood.org - hydrilla
Bonnie Million, National Park Service, Bugwood.org - halogeton
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James R. Allison, GDNr, Bugwood.org - Japanese honeysuckle

Theodore Webster, USDA ARS, Bugwood.org - sulfur cinquefoil
Chris Evans, IWAP, Bugwood.org - Eurasian water-milfoil - cutleaf teasel
Norbert Frank, UWVH, Bugwood.org - European black alder
Rob Routledge, Sault College, Bugwood.org - Amur maple
Mike Haddock, kswildflower.org - Caucasian bluestem, St Johnswort
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plumeless thistle, Todd Pfeiffer, Klamath

Co. Weed Control, Bugwood.org; spotted knapweed rosette, Steve Dewey, USU, Bugwood.org; Kristi Paul; spotted knapweed flower, Rob Rutledge, Sault College, Bugwood.org
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John Cardina, TOSU, Bugwood.org - bull thistle
Howard F. Schwartz, CSU, Bugwood.org - field bindweed
Howard F. Schwartz, CSU, Bugwood.org - woollyleaf bur sage
Steve Dewey, USU, Bugwood.org -

Scotch thistle- houndstongue
John Cardina, TOSU, Bugwood.org - bull thistle
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Jill Swearingen, USDI NPS, Bugwood.org - common reed
Jill Swearingen, NPS, Bugwood.org - Japanese knotweed
Steve Dewey, USU, Bugwood.org -

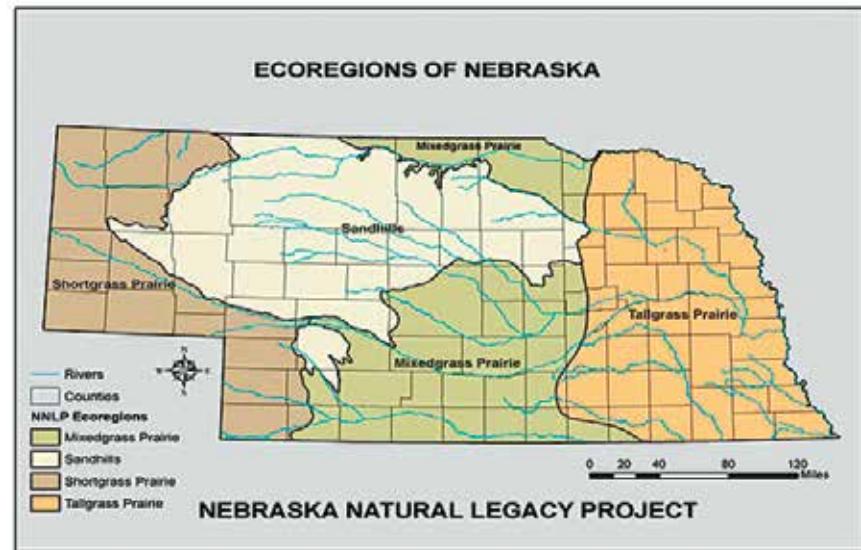
plumeless thistle
Barbara Tokarska-Guzik, University of Silesia, Bugwood.org
giant knotweed
Bonsak Hammeeras, Bioforsk - NIAER, Bugwood.org - Canada thistle
Barry Rice, sarrazenia.com, Bugwood.org - leafy spurge
Eric Coombs, ODA, Bugwood.org - purple loosestrife
Mike Haddock, kswildflowers.org - Sericea lespedeza

Invasive Plants Watch List: 2017



**Kristi Paul, Sheridan County
Weed Superintendent and
PRIDE Board Member**

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. A complete list and images of invasive plants in Nebraska can be found at <http://snr.unl.edu/invasives>.



MAP COURTESY OF NEBRASKA GAME AND PARKS COMMISSION

CATEGORY 1: Future Invasive Species

These 6 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



Water Hyacinth



Brittle Naiad



Hydrilla



Giant Salvinia

CATEGORY 2: Shortgrass Prairie Ecoregion



Russian Knapweed



Goat's-rue



Black Henbane



Houndstongue



Saltlover



Perennial Pepperweed

CATEGORY 2: Sandhills Ecoregion



Yellow Bedstraw



Meadow Knapweed



Sulfur Cinquefoil



Eurasian Watermilfoil

BLACK KNAPWEED
HOUNDSTONGUE
YELLOW BEDSTRAW
BROADLEAF PEPPERWORT/
PERENNIAL PEPPERWEED
EURASIAN WATER-MILFOIL
SULFUR CINQUEFOIL

CATEGORY 2: Mixed-grass Prairie Ecoregion

AMUR MAPLE
RUSSIAN KNAPWEED
GARLIC MUSTARD
AUSTRALIAN BEARDGRASS
(CAUCASIAN BLUESTEM)
CUTLEAF TEASEL
EUROPEAN ALDER-BUCK-
THORN
JAPANESE HONEYSUCKLE
EURASIAN WATER-MILFOIL
SULFUR CINQUEFOIL



Amur Maple



Garlic Mustard



Caucasian Bluestem



European Alder Buckthorn

CATEGORY 2: Tallgrass Prairie Ecoregion



Cutleaf Teasel



St. Johnswort



Japanese Honeysuckle

AMUR MAPLE
RUSSIAN KNAPWEED
GARLIC MUSTARD
AUSTRALIAN BEARDGRASS
(CAUCASIAN BLUESTEM)
YELLOW BLUESTEM
BLACK KNAPWEED
YELLOW STAR THISTLE
SWEET AUTUMN
VIRGIN'S-BOWER
HOUNDSTONGUE

CUTLEAF TEASEL
SICKLWEED
GOAT'S-RUE
YELLOW BEDSTRAW
JAPANESE HONEYSUCKLE
EURASIAN WATER-MILFOIL
KUDZU
HOARY CRESS
ST. JOHNSWORT
CROWN VETCH

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: <http://snr.unl.edu/invasives>

Herbicide Application 101

By **Lora O'Rourke, PRIDE WMA President**

Applying herbicide for the first time can be intimidating. Here are some quick tips and terms to help make sense of it all.

Know Your Target Invasive Plant

By simple definition, a weed is a plant out of place. Typically, a weed will become established in areas where the desirable vegetation is weak or in areas of bare soil caused by some disturbance.

Weed identification is essential so that you can determine the best control method. Some weeds such as musk thistle can be controlled easily by chopping. It helps to know if the weed is an annual, biennial or perennial, and how it spreads. For example, does the target plant spread by seed, tillers and/or rhizomes?

Some weeds are designated as state listed noxious weeds and are required by the Nebraska Noxious Weed Act to be controlled. Other invasive weeds are on county noxious weed lists or state watch lists, while many common weeds are native plants that are not considered to be invasive. If you cannot identify a plant, your local county weed superintendent will gladly help you figure out what species it is, and what management if any, should take place.

Map Your Weed Problem Areas

Develop an accurate map of the fields and landscape areas you manage. Most landowners have great maps of their property and can pinpoint the precise location for each weed infestation. In addition to traditional maps, there are now many mapping applications available for smart phones or other devices.

When to Apply Herbicide

TIME OF DAY - Herbicide is most effective when it is able to successfully reach its target area in or on a plant. To ensure this happens, apply herbicide during the cooler time of the day, such as morning or evening. Once temperatures reach 90° F, plants "shut down" and are less likely to absorb herbicide.

If the plant is wet from dew or rain, herbicide application should be delayed until the plant has a chance to dry. Overall effectiveness of any herbicide is less when the plant is wet. If the herbicide is applied correctly, it will take the weed up to 10 days to show distress and wilting. If the plant browns and is "burned down" within a few days after application, chances are the plant did not translocate the herbicide to the roots. If the target weed is a perennial, it will likely produce new growth from the root system.

TIME OF YEAR - For most weeds, the best time of year to apply herbicides is either in the early spring or late fall. In the spring, the best time to treat is when the plant is in initial growth stage, before it flowers. At this time the plant is actively growing and carrying on photosynthesis, so herbicide applied at this time will be taken in by the plant. In the fall, the most effective time to treat weeds, especially deep rooted perennials, is after a mild frost. When temperatures start to cool down in the fall, plants begin moving carbohydrates from leaves to the root system so that they can survive winter

dormancy. This is a great time to apply a systemic herbicide so that it can be translocated to the roots as well. Weed professionals agree the most successful control of perennial noxious weeds occurs with late fall herbicide applications.

HERBICIDE APPLICATION WITH A SPRAYER - Many herbicide labels say "only apply until the leaf is wet." In other words, just enough herbicide to wet the plant – not the ground around it. Too much herbicide application is not only a waste of money, it can also be harmful to the environment. Each product has directions for application that should be read and followed.

New products are continually being introduced and existing products refined. Before making a product decision, consult with your county weed superintendent or county extension agent. University of Nebraska Extension Service has an excellent publication called: Guide for Weed, Disease, and Insect Management in Nebraska, EC130 that lists noxious weeds and recommendations for control. Herbicides are labeled for the site on which they should be used.

The person applying the herbicide must read and follow the label directions precisely. The label is the law.

Reference for terms: October 16, 2011, <http://ucanr.edu/blogs/blogcore/> Brad Hanson, Weed Science Department, University of California, Davis

COMMONLY USED HERBICIDE TERMS

PRE-EMERGENCE (OR PRE-EMERGENT) HERBICIDES

Herbicides that are applied before the target weed germinates and emerges. They act on the roots or shoots of newly germinated seeds – often killing the seedling before or right as it emerges from the soil.

RESIDUAL ACTIVITY

Pre-emergent (or soil applied) herbicides have residual activity, meaning the herbicide continues to be active in the soil for several days, weeks, or months after application.

POST-EMERGENCE (OR POST-EMERGENT) HERBICIDES

These herbicides are applied to the foliage of the target weed after it has emerged from the soil.

TANK MIX

Often a tank mix is used to broaden the spectrum of weed control, such as a grass herbicide and broadleaf herbicide mix, or a pre-emergent and post-emergent combination. A test should always be done before mixing two herbicides in a tank mix. Some products do not work well together, resulting in a tank full of sludge. The product labels normally have a list of compatible products.

TRADE NAME

This is the brand name of a commercial herbicide product that may contain one or more active ingredients, adjuvants, stabilizers, emulsifiers, or other inert ingredients. Herbicides are registered and labeled by their trade name and it is important to know that the same active ingredient may be available under different trade names. Roundup® is the trade name for a common herbicide active ingredient, glyphosate. However, there are hundreds of trade named products with this same active ingredient made by different manufacturers or sold for different markets.

ACTIVE INGREDIENT

The active ingredient is the chemical molecule that impacts the target plant. We usually shorten the "chemical name" to a (somewhat) simpler "common name". For example, the chemical N-(phosphonomethyl) glycine is known by the common name "glyphosate."

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Every herbicide label has requirements for PPE. This may be long sleeves, rubber gloves, eye protection or a respirator. Since the label is the law, any person applying an herbicide should be wearing the proper protective clothing listed on the label of the product they are applying.



CONTACT HERBICIDES - This term generally refers to herbicides that only affect the tissue directly treated with the herbicide – the herbicide does not move to untreated parts of the plant after application. Good spray coverage is essential for acceptable control with contact materials. An example of a contact herbicide is glyphosate (Roundup®).

Whether your sprayer is one gallon or 1,000 gallons, the label applies to you. The herbicide label is the law.

SYSTEMIC (OR TRANSLOCATED) HERBICIDES

- These herbicides can move from treated plant parts to untreated parts either through the xylem or phloem. For example, a systemic pre-emergent herbicide could be taken up by roots and moved to leaves. Or, a systemic post-emergent herbicide applied to the leaves could move to other leaves or to roots. Typically, systemic materials work better on established perennial weeds than a contact herbicide.

For GREAT Results, Control Noxious Weeds This Fall

By: Kristi Paul, Sheridan County Weed Superintendent

NEBRASKA'S BIENNIAL NOXIOUS WEEDS:

Musk thistle, plumeless thistle, spotted knapweed, diffuse knapweed.

COUNTY ADDED BIENNIAL NOXIOUS WEEDS:

Scotch thistle, houndstongue, common mullein and bull thistle (see page 11 for counties involved in The Weed Watch).

Biennial plants usually have a two year growing cycle. In the next few weeks, biennial plants will form a rosette (circle of leaves on the ground). Next spring, if left untreated, the rosettes will produce a stalk, bloom and set seed. Biennial plants reproduce only by seed. Controlling biennial noxious and invasive plants this fall by spraying at rosette stage will give you a head start on next years' weed management plan.

It is crucial for biennial weed to establish and maintain a large seed bank. Once plants have been allowed to bloom and produce seed, many species have seed that can remain viable for years. For instance, musk thistle seeds can remain viable for 10 years.



MUSK THISTLE

SPOTTED KNAPWEED

PLUMLESS THISTLE

CANADA THISTLE

LEAFY SPURGE

NEBRASKA'S PERENNIAL NOXIOUS WEEDS:

Canada thistle, leafy spurge, saltcedar, phragmites, purple loosestrife, Japanese knotweed, giant knotweed, and sericea lespedeza.

COUNTY ADDED PERENNIAL NOXIOUS WEEDS:

Field bindweed, woollyleaf bursage and perennial yellow bedstraw (see page 11 for counties involved in The Weed Watch).

In addition to reproducing by seed, perennial noxious weeds have a deep and often extensive root system. This type of root system can make these species more difficult overall to control. Very seldom does one herbicide application control a perennial noxious weed. If it were that easy, we would not need a noxious weed law. Diligence and persistence are required to control perennial noxious weeds. Late fall herbicide applications provide the most successful results. At this time, the plant is pulling nutrients deep into the root system to increase its' survival rate. Herbicide applied will also be pulled deep into the root system, resulting in better control.

While fall control may provide the best results, it is important to prevent the perennial plant from blooming and producing viable seed during the growing season. Often two herbicide applications per year are necessary to control perennial noxious weeds. For even better results, carry a small spray tank in your pickup, or on your 4 wheeler, so it is handy to spray noxious weeds as you find them on your property. Always read and follow the herbicide label directions. The label is the law.



PHRAGMITES

SANDHILLS WEED MANAGEMENT AREA - MIDDLE NIOBRARA WEED AWARENESS GROUP*

WMA Office – 308-346-3393
Blaine/Thomas • Carol Conard – 308-346-4047
Boone • Todd Buettner – 308-750-5214
Brown • Matt Wambold – 402-875-0118 *

Cherry • Barbara Small – 402-322-1067 *
Custer • Ridge Horky – 308-872-2410
Garfield • Jimmy Petersen – 308-201-0045
Grant • Cody Renkoski – 308-203-1454

Hooker • Neal Hayward – 308-546-2706
Greeley • Walter Bjorklund – 308-428-5955
Keya Paha • Travis Mundorf – 402-497-3800 *
Loup • Zane Young – 308-214-0923

Nance • Kevin Koziol – 308-536-2523
Rock • Rod Stolpart – 402-822-0186 *
Valley • Darrel Kaminski – 308-383-2701
Wheeler • Doug Reiter – 308-654-3397

COUNTY-ADDED NOXIOUS WEEDS



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

Banner Garden
Box Butte Morrill
Cheyenne Scotts Bluff
Dawes Sheridan
Deuel



PRIDE serves as a cornerstone to build and maintain partnerships between the many cooperators in invasive weed management and education. With this collaborative effort, a more efficient and successful approach to invasive weed management and awareness is achieved. PRIDE's efforts in pooling of funds and resources from contributors will result in a compounding of investments and rewards.



COMMON MULLEIN
Cheyenne County

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

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



SCOTCH THISTLE
Banner
Box Butte
Cheyenne
Dawes
Morrill
Kimball
Scotts Bluff
Sheridan
Sioux

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



WOOLLYLEAF 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.

BULL THISTLE
Rock

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



something for

"PLAN THE WORK, WORK THE PLAN!"

KIDS

OF
ALL
AGES

W I L D L I F E A P I T S I L H C T A W S P I A P W N
G T N A M R O D L A I N N E I B E P I P W L D R C E A
N I T N U H A A M S S A G G A W N M A R A A E O E E L
I P U L L N N W O R K R H I Z O M E S I T N N E F D P
K F S S P T N T A Z U P N O I T A C U D E T T Y I W E
I M E E S E X A M P L E E D E D A V N I R W I E R A H
H A O R O O T S S A N D H I L L S C L O T A F L T T T
E P G I D D E Y I Q U I N A T U R A L N S R Y L S C K
L P N C H I F N A G G C R T P O A E L A E T E A O H R
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O Y Z A E L Y D U D H B D S A A R T D I C D D E L E W
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A N A D A T H I S T L E O C C O T E N T S I O H P M H
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E O D E E W P A N K E S U F F I D M U T S E E T G O L
I E W L I T W I N V A L L E Y L O T N A L P E N W U P
E O P N I P S I G H T B I N D W E E D R B A B W A E E
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L A R T N E C T S E W A G Q U I T N E M N O R I V N E
O S T S H A R E R A D E C D E R N R E T S A E T A E R

HIDDEN WORD FIND - Responsible landowners take pride in their management efforts to control weeds on private lands in order to protect our environment. Sometimes the greatest challenge is to understand how invaders spread, the groups involved in treating them, and tools they use. Find the words listed below in the puzzle to the left.

Words are arranged horizontally, vertically, diagonally, forwards (left to right) and backwards (right to left) and top to bottom or bottom to top.

- | | | | |
|-------------------|-------------------|-----------------------------|-------------------|
| Absinth wormwood | Fall | Local | Riparian |
| Acre | Feed | Management | Rivers |
| Annual | Flower | Milk weed | Roots |
| Apply | Fun | MNWAG | Saltcedar |
| Bedstraw | Giant knotweed | Mowing | Sandhills |
| Biennial | Grazing | Musk thistle | Scotch thistle |
| Bindweed | Harvest | Native | Seed |
| Canada thistle | Hay | Natural | Sericea lespezeza |
| Control | Help | People (2) | Simple |
| Cost share | Herbicide | Perennial | Spotted knapweed |
| Conservation | High Plains | Pest | Spread |
| Crops | Hiking | Phragmites | St. John's wort |
| Diffuse knapweed | Houndstongue | Plant | Tall |
| Dip | Hunting | Plan the work work the plan | Team |
| Dirt | Identify | Plants | Treat |
| Dormant | Invade | Platte Valley | Twin Valley |
| Eastern red cedar | Invasive | Plumeless thistle | Watch list |
| Economic | Japanese Knotweed | Prevention | Water |
| Education | Join | PRIDE | Weed free |
| Environment | Label | Pull | Weed |
| Equipment | Landowner | Purple loosestrife | Weeds |
| Example | Leafy spurge | Rhizomes | |



Can you spot the 10 differences in these pictures?

ANSWERS



NEBRASKA'S NOXIOUS WEEDS

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

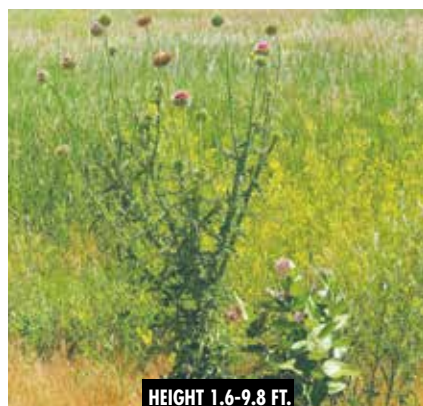
Noxious weed is a legal term used to denote a destructive or harmful weed for the purpose of regulation.

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.



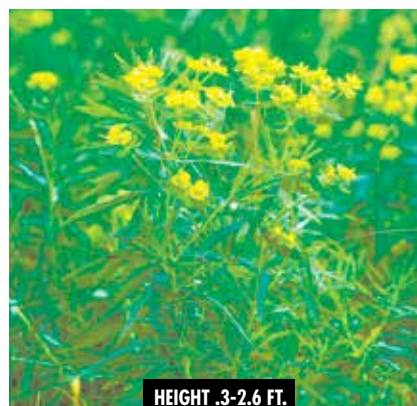
HEIGHT 1-3.9 FT.

Canada Thistle



HEIGHT 1.6-9.8 FT.

Musk Thistle



HEIGHT 3-2.6 FT.

Leafy Spurge



HEIGHT 1-3.9 FT.

Spotted Knapweed



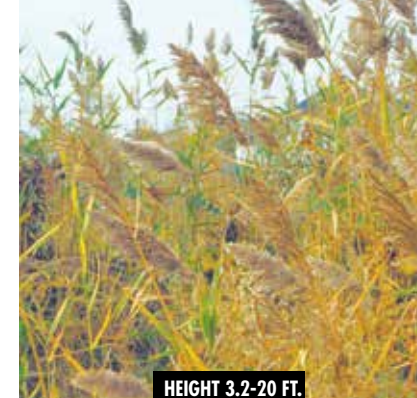
HEIGHT 1-4.9 FT.

Plumeless Thistle



HEIGHT 3.3-20 FT.

Saltcedar



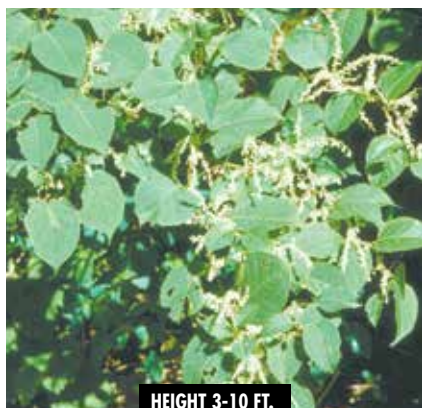
HEIGHT 3.2-20 FT.

Phragmites



HEIGHT 1-3.9 FT.

Diffuse Knapweed



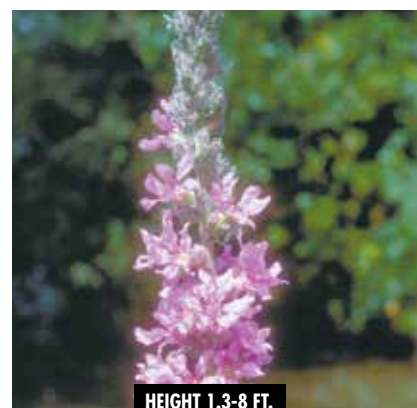
HEIGHT 3-10 FT.

Japanese Knotweed



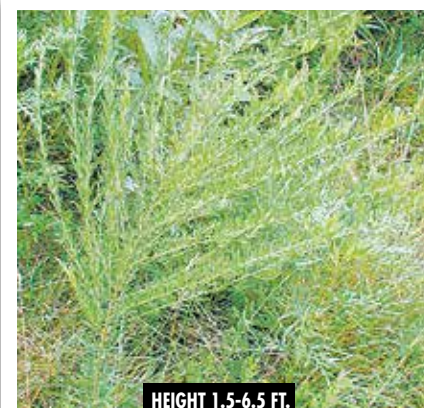
HEIGHT 8-13 FT.

Giant Knotweed



HEIGHT 1.3-8 FT.

Purple Loosestrife



HEIGHT 1.5-6.5 FT.

Sericea Lespedeza