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 2015

The Importance of Fall Weed Control... Especially THIS YEAR

By Kristi Paul,
Sheridan County Weed Superintendent

Once again weed professionals from across the state have proclaimed this as "the worst weed year ever". The established perennial noxious weeds such as Canada thistle, leafy spurge, purple loosestrife and phragmites had a banner year. And the biennial weeds (which reproduce only by seeds) exploded this summer. The bountiful spring rains led to the growth of seed banks that have been laying in waiting for years to make their arrival this year. Weeds we thought we had a tiny bit of a hold on showed up in pastures, on roadsides, and in many disturbed areas.

Perennial weeds such as Canada thistle, leafy spurge, phragmites, purple loosestrife, saltcedar, sericea lespedeza, giant and Japanese knotweeds take a perennial effort to control. Most of the perennial noxious weeds have an extensive root system with rhizomes that send up new plants from underground in addition to reproducing by seed. **Herbicide control of all perennial weeds is the most effective in the fall. About the time Mother Nature gives us a light frost, the perennial plants are pulling nutrients down into their root systems, to store energy to survive the winter. Herbicide applied at this same time also gets pulled deep into the roots for a more effective rate of control.**

Notice the extensive root system of Leafy Spurge (above left) and Purple Loosestrife (above right). The lateral roots and rhisomes will send up several new plants.

Biennial weeds such as musk thistle, Scotch thistle, houndstongue, spotted and diffuse knapweed, common mullein and plumeless thistle will produce a rosette this fall. **The rosette is a circle of leaves on the ground, or the first year growth of a biennial or two year plant. If left untreated, the rosette will then bolt, bloom and go to seed next summer.**

Spotted Knapweed Rosette

Houndstongue Rosette

Musk Thistle Rosette

When the current Nebraska Noxious Weed Act was implemented in 1989, Nebraska had 4 noxious weeds; Canada thistle, musk thistle, plumeless thistle and leafy spurge. Today we have 12 noxious weeds that landowners are required to control, in addition to many "county added" noxious weeds in various counties across the state.

And if that is not enough, we are seeing NEW invaders every year, plants that are noxious in other states and are brought into Nebraska in hay, on equipment, by recreational folks, or by animals. Have you heard of absynthe wormwood, or black henbane? How about yellow flag iris or bur buttercup? Each year brings a few new invasive plants, and creates more headaches for homeowners, landowners and weed professionals. Since these plants are not native to America, they tend to move in, take over and crowd out native vegetation. For this reason, homeowners and landowners are encouraged to always be on the lookout for "a plant out of place". You know what usually grows on your place, so if you see something unusual, take a minute to get it identified, and take measures to control it while there's only a few plants.

How silly is it to create bad feelings between neighboring landowners over weeds? Controlling the noxious weeds prevents them from spreading, preserves your land and most importantly, it's the law! Good neighbors control noxious weeds.

None of our noxious weeds are easy to control. They have been placed on the noxious weed list because of their obnoxious tendencies, and these invasive plants jump at the chance to fill in where there is a void or disturbed area of soil. Left alone, the noxious weeds will quickly form a monoculture and become more and more difficult to control. The old adage an ounce of prevention is worth a pound of cure is very fitting with noxious weed control.

So, this fall…because of the overabundance of noxious and invasive weeds we've had this summer, it is more important than ever that you make an effort to control both biennial and perennial noxious weeds.

TVWMA Landowners - We Need Your Help So We Can Help You!

The invasive weed phragmites (the non-native subspecies) was put on the Nebraska Noxious Weed list six years ago. Since that time it has become very prevalent in South Central Nebraska. We need your help in reporting to us any sightings that you may have had so that we may treat it with herbicide. The Twin Valley Weed Management Area received grant funding the past six years from the Nebraska Environmental Trust to combat this invader along the Republican River with excellent success. Unless we treat the source of the phragmites problem upstream in our tributaries and ravines this work will all be in vain.

Pictured at left is Furnas County Weed Superintendent Todd Weverka treating phragmites with herbicide in the Republican River Channel.

Summer growth of invasive phragmites

Bud Collison examines the seed head and stem of a mature phragmites plant

This invasive perennial is found most generally along the river, around ponds, along creeks, and in the bottom of sub-irrigated ravines and road ditches. The plant spreads not only by seed, but is rhizomatous and can spread tenfold in a single season. It has no forage value to livestock or to wildlife. With phragmites being declared as a noxious weed, it is required that landowners control and eradicate it. Don't let it go, as its thick mass will choke out all other palatable vegetation. Phragmites can be easily identified with its fluffy seed head similar to other tall ornamental grasses.

Funds are currently available for the 2015-2016 project period. To take advantage of this opportunity, report infestations to us, and it will get treated FREE OF CHARGE. To qualify for this program your property must be within the TVWMA, which includes Fillmore, Thayer, Nuckolls, Clay, Adams, Webster, Franklin, Kearney, Harlan and Furnas counties. If you have a tenant overseeing your property, please notify them of this service. Once this project is completed, control of phragmites will be the landowner's financial responsibility.

High Plains Weed Management Association (HPWMA) is actively working to inform and educate landowners about Russian olive, saltcedar, phragmites and the program we offer to remove these invasive species. HPWMA will cost share with the landowner for the initial tree removal and subsequent re-growth treatment. HPWMA will cover 75% of the cost for removal, 50% for second year treatment and 40% for third year treatment, if needed. We want to thank the Nebraska Environmental Trust for their generous support that funds this HPWMA program.

The wet spring/summer put projects on hold until late July. Many areas that have been approved for Russian olive removal or re-growth spraying had high water levels that made access to trees impossible. In July, the North Platte River water level receded down far enough to access these areas, so removal and re-growth spraying is moving forward. A concern that has been brought up by many landowners and contractors is the spread of the Russian olive seeds due to high water. HPWMA Coordinator Clinton Riesen has been stopping to visit with area landowners involved in the program, as well as new clients about potential concerns from the influx of seeds. Because of the possible flush from seed, landowners will be watching for new growth in the future. Landowners appreciate the information provided, and realize that a pro-active approach is the best way to control this invasive species.

One of the goals for 2015 is to continue to get in touch with landowners to look at sites that need follow- up treatment, and work on finishing contracts for new projects. Another goal for 2015 is to contact landowners that have not participated in the program, to offer cost share assistance for removal projects.

If you are interested or have questions about the program, please check out the web site at www.HPWMA.com or contact Clinton Riesen at (308)633-1264.

The Nebraska Environmental Trust

THANK YOU FOR YOUR HELP.

Fillmore • Todd Boller	402-366-1921	cell: 308-660-3050
Thayer • Brian Schardt	402-365-4366	cell: 402-364-3249
Nuckolls	402-225-3931	
Clay • Bruce Rumsey	402-762-3652	cell: 402-224-0054
Adams • Eric Walston	402-461-7173	cell: 402-705-2400

CONTACT PERSON FOR EACH COUNTY

Webster • Dennis VanWey	402-746-2890	cell: 402-746-0093
Franklin • Mark Goebel	308-425-3716	cell: 308-470-0589
Kearney • Joe Anderson	308-832-2854	cell: 308-830-0815
Harlan • Tim Burgeson	308-928-9800	cell 308-920-0397
Furnas • Todd Weverka	308-268-2824	cell 308-962-4654

HIGH PLAINS WEED MANAGEMENT AREA

Coordinator	Banner County	Cheyenne County	Deuel County	Garden County	Kimball County	Morrill County	Scotts Bluff County	Sioux County
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TWIN VALLEY WEED MANAGEMENT AREA

Adams County	Clay County	Fillmore County	Franklin County	Furnas County	Gosper County	Harlan County	Kearney County	Nuckolls County	Thayer County	Webster County
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Coordinator • Merle Illian 402-746-3560

It's Not Just What's Above the Ground with Canada Thistle

By Rod Stolcpart, Rock County Weed Superintendent

Nebraska noxious weed Canada thistle is a cool season perennial that spreads by seeds and roots/rhizomes. While most thistles are controlled simply by keeping the plant from going to seed, this is not necessarily the case with Canada thistle. This plant will flower from June through August and will be easy to identify due to the fact that it will grow in a dense patch of lavender blooms, rather than isolated scattered single plants.

Just like many noxious weeds, Canada thistle originated in Eurasia and North Africa. Though this plant was introduced to North America, its' natural biological predators that can aid in keeping it contained did not come along at the same time. Over the years, scientists and researchers have obtained insects from Europe that specifically attack Canada thistle in different ways. The stem mining weevil (litura) mines the stem, while the stem gall fly lays eggs in the stem tissue and causes a hard woody gall to form and rob the plant of energy. Biological control of Canada thistle takes patience as well as years to see results, and across Nebraska we have found that in all bio-control efforts, while some show success, there is no guarantee.

Canada Thistle roots.

Canada Thistle

Even though herbicide control in the fall is proven most effective, it is important to keep Canada thistle from going to seed. Using the appropriate herbicide to keep it from going to seed, followed by a fall application will give very good results.

You see, it's not just what's above the ground with Canada thistle that is the problem. In the photograph you can see part of the root system of a Canada thistle plant. Note how the root has lateral roots growing in both directions. Along the root system new plants will emerge. Digging or chopping this plant is probably a futile effort as once the stem has been cut, more plants will grow from the roots. Tillage is not effective and can increase the problem. The root parts that spread across the field are capable of starting new Canada thistle plants.

Control with herbicide has shown a significant reduction of the severity of infestation, but seldom does one application control this aggressive perennial noxious weed. If Canada thistle is growing only in patches, spot spraying is effective, rather than broadcast spraying an entire area.

As the cooler weather approaches, Mother Nature sends the signal for perennial plants to begin the process of going dormant. Just after the first frost, using a product with the active ingredient aminopyralid in rangeland, pasture, non-crop or CRP can provide up to 18 months of control. The active ingredient clopyralid works well in wheat, barley, fallow, rangeland or pastures. Using herbicides just after the first frost is your best opportunity for the active ingredient to translocate into the root system. For that reason Fall is a great time to take action on Canada thistle. Even after several years of herbicide application and successful control, landowners should be aware of the ability of re-establishment if an area is disturbed. Landowners are encouraged to contact their local county weed control superintendent for herbicide recommendations.

Many people refer to this plant as Canadian thistle. When landowners would mis-name this noxious weed a dear friend of this writer (with a loud boisterous voice) would call out the proper name, and would then follow up by noting that this plant did NOT come from Canadia. Whether using mowing, grazing, herbicide control, biological control or prescribed burning, landowners might want to combine a variety of methods to control Canada thistle. Putting in some extra effort this fall will pay great rewards come next spring.

DIY Weed Control

By Jan Bruhn, PRIDE Board Member

So, you found your small acreage home has a patch of plants or weeds you don't recognize. What can be done to solve the problem? With any problem comes options for solutions. It's the same with weed control problems. First step towards a solution is to identify the problem. Your local weed superintendent, extension educator or other professional weed person can help identify the unknown plant.

Is it a biennial (two years to complete life cycle) or a perennial (three or more years)? Determining the life cycle of the weeds helps establish the most effective means to control the plant. Different techniques can be used to get on the path to controlling the problem weeds. Whether it be biological control, mechanical control, or herbicide control, your weed control advisor can help here too.

If the plant is a noxious weed, you are required by law to control it. If it happens to be a Watch List weed, you are not required to control it, but you are encouraged to control it, and keep it from becoming a large infestation.

Herbicides applied at the proper time in the life cycle of biennial or perennial plants are often the most cost effective and efficient means of dealing with noxious and invasive plants. Owner-operators of small acreages often find it is rewarding to do the job themselves. Using smaller spray equipment ranging from a 2 gallon hand sprayer to a 20 gallon ATV sprayer mounted on a 4 wheeler may meet your needs.

First time herbicide users should be cautious when deciding which herbicide to use. Consulting a professional is a wise choice. There are restricted use and non-restricted use herbicides. The restricted use products require a special license to buy them and to apply them. The special license is issued after attending training offered by the UNL Extension Agency. With the use of any herbicide, always read and follow label directions. The label will tell you what weeds the product controls, the proper rate to apply, what growth stage it works best on (or when to apply), proper protective clothing needed – such as gloves, long pants or long sleeved shirts, and other important information such as how long to stay away from the treated area.

Talking with a weed control professional can help you do it yourself safely and wisely. As soon as an infestation of noxious, unwanted or unwelcome weeds is spotted, they can be dealt with quickly, efficiently and safely. With a little homework, your small acreage can change from a weedy nightmare to become your dream come true.

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 • Doug Mulligan – 402-387-2287 *
Cherry • Barbara Small – 402-322-1067 *
Custer • Ridge Horky – 308-872-2410
Garfield • Jay D Tetschner – 308-346-5696
Grant – 308-458-2821
Hooker • Neal Hayward – 308-546-2706
Greeley • Walter Bjorklund – 308-428-5955
Keya Paha • Travis Mundorf – 402-497-3800 *
Loup • Lynn Strong – 308-942-6218
Nance • Kevin Koziol – 308-536-2523
Rock • Rod Stolcpart – 402-822-0186 *
Valley • Darrel Kaminski – 308-383-2701
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PLATTE VALLEY WEED MANAGEMENT AREA

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

FOCUS on FOUR: Plants to watch for in Nebraska's Ecoregions

Sandhills Prairie: Sulphur Cinquefoil

Impacts- Sulphur cinquefoil competes with native vegetation due to its extensive fibrous root system and self-pollination ability. High tannin content discourages grazing by livestock and wildlife.

Lifecycle- Perennial plant, flowering May to July. Five yellow petals and unique palmate leaves. Plants are long-lived and highly persistent. Where found in NE- The plant is widespread throughout Nebraska, found particularly in the East and Sandhills

Control Methods- Mowing is not effective and can increase plant growth via new woody crown shoots. Single plant digging is good for smaller populations while herbicides can be effective with the appropriate surfactant and repeat treatments.

Prevention- Prevent existing plants from spreading by washing vehicles and boots that have been in an infested pasture. Monitor animal movement and allow seeds to pass through livestock before moving from infested to un-infested pastures.

Mixed Grass Prairie: Garlic Mustard

Impacts - Garlic mustard competes with native vegetation, can be lethal to butterfly larvae, and inhibits the growth of mycorrhizal fungi in soil.

Lifecycle - Biennial- The first year is a basal rosette, the second year the plant bolts, blooms, and produces seed. Small white flowers with four petals.

Where found in NE - This plant can grow anywhere but is most prolific in moist, shady areas. Garlic mustard establishes quickly along roadsides, flooded stream banks, and forested areas.

Control Methods - Hand-pulling of small infestations, removing as much of root as possible, is often effective. Apply glyphosate-based herbicide at any time of year, though you will most likely need repeat applications.

Prevention - Avoid accidental seed dispersal.

Shortgrass Prairie: Houndstongue

Impacts - Houndstongue can cause skin irritation, gets caught in animal fur, can be poisonous to animals, and has a very long taproot that competes with native vegetation

Lifecycle - Biennial- The first year is a basal rosette, the second year the plant bolts, blooms, and produces seed. The fruit is four prickly nutlets that act like Velcro and latch onto clothing, passing animals, recreational vehicles, or equipment. The plant is not palatable to livestock or wildlife due to alkaloid content which can disrupt liver cell formation. The mature plant can produce up to 2,000 seeds that remain viable for 2-3 years.

Where found in NE - The plant is prolific and found in abandoned croplands, waste spaces, roadsides, rangelands, riparian drainages, and pine timber. Houndstongue spread is rapid and abundant.

Control Methods - Treat rosettes with herbicide and mow flowering stalks before seeds mature. Repeat this often. Hand-pulling or grubbing of individual plants may be effective in smaller areas. Integrated management utilizing multiple management techniques is the most effective option.

Prevention - The plant is a poor competitor against native perennials and requires bare or disturbed sites to become established. Maintain healthy native plant communities to help reduce infestations.

Tallgrass Prairie: Teasel

(Common- shorter spike, purple flowers- and Cutleaf- longer spike, white, tannish flowers)

Impacts - Teasel plants form large, dense stands that choke out native species and can reduce forage and wildlife habitat.

Lifecycle - Biennial- The first year is a basal rosette, the second year the plant bolts, blooms, and produces seed. The plant blooms from July through September. Teasel can be very aggressive.

Where found in NE - Usually found along irrigation ditches, waste places, abandoned fields, and stream and river channels.

Control Methods - There is no biological control available. Mechanical treatments like digging and cutting are effective before the seed head matures. Herbicide treatments can be effective.

Prevention - Minimize seed dispersal and disturbance. Maintain healthy native plant communities and prevent bare spots caused by overgrazing.

WEST CENTRAL WEED MANAGEMENT AREA

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Keith County
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308-636-6157

Bioherbicide vs. Cheatgrass

By Cheryl Schwartzkopf, Supervisor, Converse County Weed and Pest

Cheatgrass is a significant invasive weed in the western US, because it decreases forage quality, as well as quantity, it increases wildfires, and reduces wildlife diversity. Cheatgrass is on Converse County, WY declared noxious weed list. A county declared noxious weed is a plant that is harmful to human welfare. When cheatgrass first appeared in this region, it was called the "marching grass" because it appeared as if it was sweeping across the land.

Cheatgrass and Jointed goatgrass are invasive, annual exotic weeds. They are very competitive due to root growth that occurs in the late fall through the winter and into spring. This root growth lets them hog the limited moisture in the soil, leaving little water for the native desirable plants.

It is easy to see the results of the bioherbicide treatment on cheatgrass in the left side of the photo.

For years, landowners and agencies have been trying to find the best way to combat the spread of these invasive grasses. One of the newest tools to be utilized is a bacteria.

Bacteria that suppress cheatgrass growth are present in the soil, but their numbers are too low to suppress cheatgrass naturally. We can take them from the soil, find those that inhibit only one or two weeds, grow them in the lab, and add them back to the soil at higher numbers, so that they inhibit specific weeds. We need to select those bacteria from the soil that inhibit certain weeds and do not harm other plants like crops or natives. These bacteria inhibit cheatgrass and jointed goatgrass, which we have in our county. They also inhibit medusahead, which thankfully we do not have in our area, nor do we want it!

Timing of application is critical just as it is with regular herbicides. It is important that the bacterial application is timed so that the bacteria are in the soil when the cheatgrass is putting on its competitive root growth. The best time to spray the bacteria is in the fall when the air temperatures are below 50oF and rain or snow is in the forecast. The application window is usually mid-October to mid-December. The bacteria grow best in colder temperatures and the rainfall helps the bacteria move into the protection of soil depths. The bacteria grow well at these cold temperatures and can inhibit the cheatgrass root growth. These bacteria can grow on any plant residue or root. They survive well at low temperatures, and they go dormant in summer. It does not suppress crops or native plants.

It takes one pint of the actively growing bacteria or 2 grams of the freeze-dried bacteria per acre (in 10 or 20 gallons of water) as spray or on seed to reduce the three weeds to close to nothing in 5 to 6 years. The bacteria can be coated onto desirable seed and then the seed can be drilled into the soil as well as sprayed on the surface. The cheatgrass, jointed goat grass or medusahead that is left will be short in height with few roots or tillers. Each plant will only have a couple of viable seeds per plant. It does not act as a regular herbicide, so inhibition is not visible in the first year. If you do see a reduction in these grasses –GREAT!

These bacteria are compatible with most herbicides; however, some adjuvants can slow down the bacterial growth. In the fall, when a flush of cheatgrass may be visible, an herbicide can be applied after the perennials are dormant to reduce any weed seed produced that year. Monitoring is needed to make sure broadleaf weeds do not overtake the spaces opened up where the cheatgrass used to be.

Grazing management may be another part of an Integrated Pest Management. The bacteria label may require a 24 hour grazing restriction after applying the bacteria to allow the bacteria move into the soil. While this may seem to be an inconvenience, deferred grazing will be needed to allow the perennial natives to grow. If livestock gain entry to a newly seeded area, the livestock might defeat the seeding efforts by grabbing up both the root and the shoot of the small native plants. Land managers should restrict grazing during prime native grass growing periods for at least one year, or until the natives are reestablished.

Even though news of these weed-suppressive bacteria has come out over the last few months, research has been conducted on these bacteria for over 28 years. These bacteria were isolated in WA by Dr. Ann Kennedy while investigating weed inhibition by bacteria. The bacteria specifically inhibit certain weeds and were selected for benign characteristics. They decrease in numbers over time, so follow up may be needed. The ACK55 bioherbicide will be sent in for EPA registration soon. After registration Biowest Ag Solutions, Nampa, ID will market the bioherbicide.

In weed management, the best bet for a landowner is Integrated Pest Management (IPM) and this bioherbicide is another tool in the IPM tool box. We think that the addition of this bioherbicide will help our land managers improve their IPM expertise, and increase restoration efforts on rangelands.

Common Mullein

One of the most commonly asked questions of area weed superintendents is about the control of common mullein. In recent years it has been a very prolific species, invading areas disturbed by fire or drought. Common mullein is found in rangeland, woodland, and pastures. This biennial species produces a rosette during its first year of growth, bolts, matures and produces seed the second year. It reproduces only by seed and is a prolific seed producer (100,000 seeds per plant that can remain viable for 100 years). The taproot of this species can access soil moisture from a deeper profile at a much higher rate than the fibrous roots of pasture grasses, giving it a competitive advantage, especially in dry years. Overall growth depends on the amount and timing of rainfall. Common mullein has low palatability and is of no feed value to livestock. Heavy stands can reduce grass production as much as 50%, especially in dry years. At high densities, it appears to prevent establishment of native forbs and grasses, following fire or other disturbance.

To control common mullein, it is important to apply herbicides at the rosette stage during periods of active growth, and use a surfactant to help the herbicide penetrate the extremely hairy leaf surface. The EC-130 Guide for Weed Management in Nebraska recommends Cimarron Plus©, Escort© or Grazon P+D© (Grazon© is a restricted use herbicide). All products recommend a surfactant to add to the herbicide mixture. Read and follow the label instructions, as the label is the law.

PHOTO CREDITS

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Steve Dewey, USU, Bugwood.org black henbane/Russian knapweed/ perennial pepperweed
Catherine Herms, TOSU, Bugwood.org - goat's rue
Troy Evans, GSMNP, Bugwood.org - brittleleaf naiad
Robert Vidéki, Doronicum Kft., Bugwood.org - hydrilla
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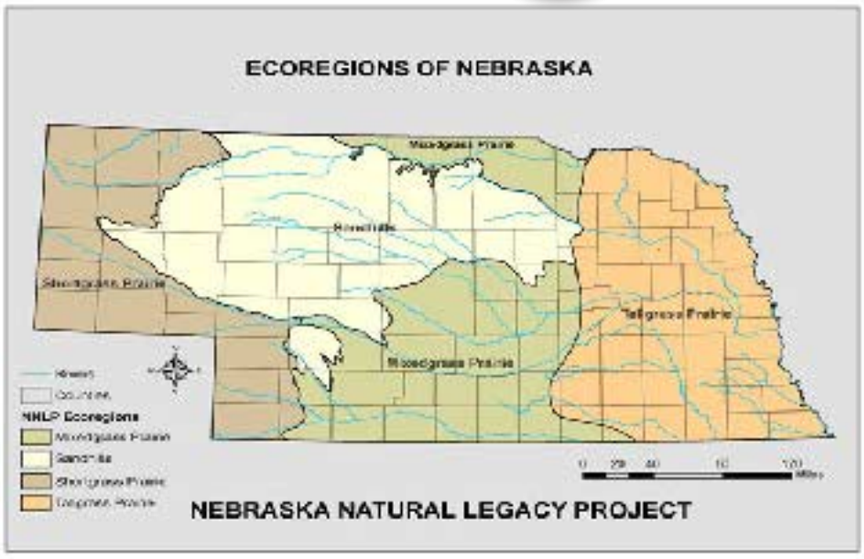
Barbara Tokarska-Guzik, University of Silesia, Bugwood.org giant knotweed
Bonsak Hammeraas, Bioforsk - NIAER, Bugwood.org - Canada thistle
Barry Rice, sarracenia.com, Bugwood.org - leafy spurge
Eric Coombs, ODA, Bugwood.org - purple loosestrife
Mike Haddock, kswildflowers.org - Sericea lespedeza

Invasive Plants Watch List: 2015

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


Perrennial Pepperweed

CATEGORY 2: Sandhills Ecoregion


Yellow Bedstraw


Meadow Knapweed


Sulfur Cinquefoil


Eurasian Watermilfoil

BLACK KNAPWEED
HOUNDSTONGUE
YELLOW BEDSTRAW
BROADLEAF PEPPERWORT/
PERRENIAL 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. John's Wort


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. JOHN'S WORT
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

Early Detection Pays

By Lora O'Rourke, President PRIDE WMA

Early detection and rapid response really pays. In June of 2014 PRIDE-WMA hosted a "Weed Walk Tour" of the yellow flag iris control project in Sioux County. Yellow flag iris exists along the Niobrara River south of Harrison, within Agate Fossil Beds National Monument and adjoining private lands. During the weed walk weed superintendents, private, federal, and state land managers saw firsthand what yellow flag iris looks like, habitats where it grows, learned control methods, and saw the plants environmental effects on native habitats. As a result those attending the meeting returned home and were on the look-out for yellow flag iris. Three weed management areas have discovered yellow flag iris and have plans in place to control the plant before it becomes an environmental threat.

These comparison photographs taken from the Hoffman Bridge, Agate Fossil Beds National Monument, demonstrate the reduction of yellow flag iris. The photo on the left was taken prior to herbicide application in June of 2014. The photo on the right was taken in April of 2015.

Jordan Spaak, Colorado State University, with Sioux County National FFA Organization students conducting a compaction research study on yellow flag iris at Agate Fossil Beds National Monument.

This is an excellent example of early detection rapid response (EDRR) weed management strategy. By surveying and finding the new invasive plant it can be treated and controlled before it becomes established and extremely difficult to control. This reduces costs and overall use of herbicides.

The yellow flag iris was sprayed with herbicide early this summer on private lands south of Harrison along the Niobrara River. Application occurred after the early June flooding of the Niobrara River. "The flooding may have had some effect on the trampling study by Jordan and the FFA kids since it happened a few days after they did the project." said Nick Sanderson, Sioux County Weed Superintendent, "The population of yellow flag iris is definitely down even though it still looks abundant in some areas, but I was pleased with the first year of spraying".

Educational kiosks and wayside signs are being developed at Agate Fossil Beds National Monument, helping spread the word on yellow flag iris and it impacts on native wetland ecosystems.

Platte Valley Weed Management Area Stopping Invasive Yellow Flag Iris

By Charles Brooks, PVWMA Chairman

The Platte Valley Weed Management Area (PVWMA) is attacking aquatic invasive plants with two methods of control. A helicopter is used in the open channels of the Platte River and an airboat is used around bridges, braided channels, and sensitive areas. In addition to airboat, another approach has been devised by PVWMA's airboat contractor; kayaks.

Over the past two seasons PVWMA has been finding Yellow Flag Iris plants on the Platte River around North Platte. This summer airboat contractor, "Working Ecosystems", discovered more plants around where Birdwood Creek feeds into to the Platte River. Since the Birdwood Creek is too narrow for airboat travel, Jamion Aden used a kayak to complete survey work up the creek. Several colonies of Yellow Flag Iris were discovered growing along its banks. This explains where the Yellow flag iris population on the Platte River around North Platte, NE came from. Jamion plans to float the entire length of Birdwood Creek with a kayak using a hand sprayer to control this source of Yellow Flag Iris on the Platte River.

PVWMA is also on the lookout for perennial pepperweed, another invasive plant that is being talked about in other weed management areas. Controlling small infestations when they are first discovered will help prevent additional aquatic invasive plant explosions on Nebraska's river systems.

Categorizing Invasive Plants

By Chris Helzer, The Nature Conservancy, Eastern NE Program Director

Managing invasive plant species is often the greatest challenge faced by land managers. Because there are so many invasives and so little time, it's critically important to be thoughtful about how to approach them. There is much good advice available about how to prioritize which species to focus on and how to approach those priority species. My own approach to invasives continues to change over time. For what it's worth, here's how I think (today) about categorizing invasive plants on our sites here in Nebraska.

I can put most invasive plant species into one of the four categories below that describe how we approach control.

CATEGORY 1 – THIN THE MATRIX

Invasive grasses, such as Kentucky bluegrass, smooth brome, and tall fescue are excellent examples of species in this group. They are plant species that are common enough that they occur throughout most of our sites, and – if left unmanaged – can form thick monocultures that exclude most other plant species. Eradication of these species is not possible without losing many of the other plants we are hoping to conserve. Instead, our general approach is to reduce their dominance and limit their impact on the diversity of the plant community. (I wrote about this approach in an earlier post, using Kentucky bluegrass as an example.)

Essentially, we try to use fire, grazing, and/or mowing to weaken invasive grass plants and open up space between them for other species to flourish. Because these suppression strategies also have negative impacts on some native species, we are careful not to use them too many years in a row. Instead, we apply them periodically, whenever it looks like the invasives are starting to exert their dominance a little too much.

Prescribed fire and grazing are the two best ways we attack invasive grasses such as smooth brome and Kentucky bluegrass.

CATEGORY 2 – BEAT THEM BACK

This group includes perennial plants that radiate outward other otherwise spread from an established source population. Species we commonly deal with that fit into this category include purple loosestrife, sericea lespedeza, and Canada thistle. It can be tempting to jump in and start attacking (with herbicides or other approaches) the biggest thickest patches of these, but that's rarely the smartest strategy. Instead it usually makes more sense to work from the outside edges of an infestation toward the middle – or source – so that the problem doesn't continue to get worse as you attack. I wrote an earlier post on that topic as well…

An exception to the "work from the outside edge first" rule applies to species such as Siberian elms that may be spreading from a single discrete patch of parent trees. If it's possible to eliminate that source population by cutting down a handful of trees, it absolutely makes sense to do that first. Next, it's smart to target other elms that are big enough to produce seed before working on the smaller ones – rather than blindly following the rule about working from the edges of an infestation. Rules are meant to be broken, after all.

CATEGORY 3 – NIP THEM IN THE BUD

This category contains invasive species that are just starting to show up in our area or at a particular site. Here, the tactic is to seek and destroy new plants as soon as they arrive, to prevent the species from becoming established. After all, it's always better to attack an invasive species before it gains a foothold.

Many species can fit within this group. For us, Common reed (Phragmites australis), crown vetch, garlic mustard, and Queen Anne's Lace (aka wild carrot) are good examples. Sometimes, we're not sure if a species will really cause serious problems if it becomes established at our sites (e.g., Queen Anne's Lace) but if minimal effort can prevent that establishment, it seems like time well spent.

Our approach to musk thistle sort of fits into this "nip it in the bud" category, but for other reasons. Musk thistle is an officially-designated noxious weed in Nebraska, and all landowners (including us) are required to eradicate it from their property each year. If it weren't for the state law, musk thistle would not be among our highest priority species because it really doesn't cause big problems in most cases (on our sites). It is most abundant where the dominant vegetation has been recently weakened by fire, grazing, or drought, but quickly diminishes in abundance when grasses recover their dominance. However, to abide by the law and to prevent thistles on our land from going to seed and affecting our neighbors, we do our best each year to eradicate musk thistle.

CATEGORY 4 – LIVE WITH THEM.

This last group includes species we don't actually consider to be invasives, at least by the criteria that a truly invasive plant acts to reduce biological diversity or otherwise simplify (and thus weaken) natural communities. Many native species are considered weeds by some of our neighbors, but we like having them around. Prime examples include annual sunflower and ragweed species. However, many non-native plants fall within this category as well, including common mullein, dandelions, goatsbeard, marestail, and sweet clover. Sometimes, we spend some time collecting and/or analyzing data to help ensure that we're categorizing these species correctly.

Dandelions are a species we just live with. They're great for early season pollinators, and aren't aggressive – they just fill space when the perennial plant community is weakened (as they are doing here in the lot around our shop buildings).

SWITCHING CATEGORIES.

Ideally, of course, we'd be able to move some invasive plant species from one category to another, so that populations of "matrix" invasives shrink to the point they are in discrete patches and we can "beat them back." Likewise, it'd be great if "beat them back" invasives became rare enough that we could eventually "nip them in the bud". Unfortunately, reality usually goes the other direction. For example, we're dangerously close to having to shift garlic mustard from "nip it in the bud" into the "beat them back" category (if not the "thin the matrix" category!) at a nice woodland site we manage. We'll see what the next year or two brings.

Regardless, I find it helpful to think about our invasive plants within categories like these because we can more easily define both our control strategies and objectives.

We hope that using more frequent fire (along with other methods) will help us prevent garlic mustard from spreading across our whole property at the Rulo Bluffs Preserve, but it's a big challenge.

Putting a species into the "nip it in the bud" category helps make it a top priority and we can prioritize resources toward keeping it rare. Just as importantly, if we know that we're only trying to suppress the dominance of smooth brome, not eradicate it, we don't have to beat our heads against the wall in frustration because smooth brome is still present.

We spend more time on invasive plant control than on any other land management activity. Unfortunately, that's true of most land managers I know. More unfortunately, invasive species numbers are going up, not down. It's not time to throw in the towel just yet, but it is absolutely critical to be organized and thoughtful about how we approach these invaders.

Hopefully, being organized will allow us to spend less time on invasives and more time enjoying the sites we manage!

To subscribe or follow Chris's blog, visit http://prairieecologist.com/

PRIDE WEED MANAGEMENT AREA

Box Butte County Cody Renkoski 308-203-1454	Sheridan County Kristi Paul 308-327-5629
Dawes County Dan Wordekemper 308-432-3056	Sioux County Nick Sanderson 308-668-9453

something for KIDS OF ALL AGES

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

Give weeds an inch and they will take a yard and then more.

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.

annual
area
bees
biennial
biological
bugs
Canada thistle
cheatgrass
chemical
climate change
common mullein
competition
conservation
cost
county
damage
desirable
diffuse knapweed
ecoregion
fall control
fire
flowers
forage
garlic mustard
goats
grazing
hay
help
herbicide
houndstongue
identify
insects
invasive
knotweed
leafy spurge
mechanical
mixed grass
musk thistle
native
Nebraska
noxious
people
perennial
pests
phragmites
plumeless thistle
pollination
preservation
prevention
PRIDE
purple loosestrife
regrowth
regulation
resistant
restoration
rhizomes
saltcedar
sandhills
scotch thistle
seeds
sericea lespedeza
shortgrass
species
spotted knapweed
state
stolons
sulfur cinquefoil
tallgrass
teamwork
teasel
treatment
watch list
water
yellow flag iris

Can you spot the 7 differences in these pictures!

ANSWERS

1. Collar on guy with hat
2. Mouth of guy with gun
3. Sock color
4. Design on gun
5. Lion's nose
6. Lion's hair
7. Top of man's hat

COUNTY-ADDED NOXIOUS WEEDS

Kristi Paul, Sheridan County Weed Superintendent and PRIDE Board Member. In addition to the twelve weeds that have 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
Dawes
Deuel
Garden
Morrill
Scotts Bluff
Sheridan

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

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.

HOUNDSTONGUE

Dawes
Sheridan

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

SCOTCH THISTLE

Banner
Cheyenne
Dawes
Morrill
Kimball
Scotts Bluff
Sheridan
Sioux

1 to 10 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

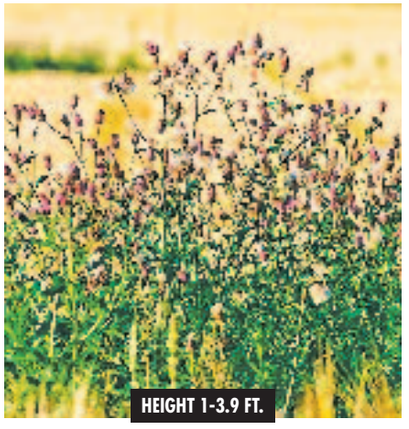
Cherry

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 oif residents of this state. Noxious weeds many also devalue and reduce tax revenue.



Canada Thistle

Musk Thistle

Leafy Spurge

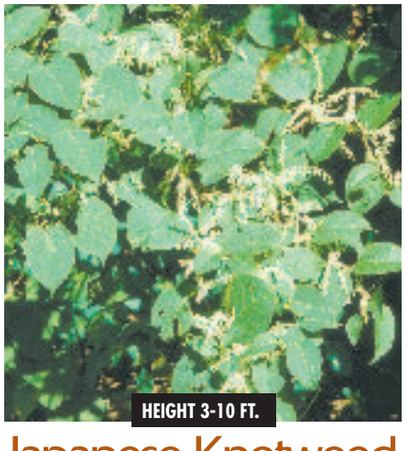
Spotted Knapweed

Plumeless Thistle

Saltcedar

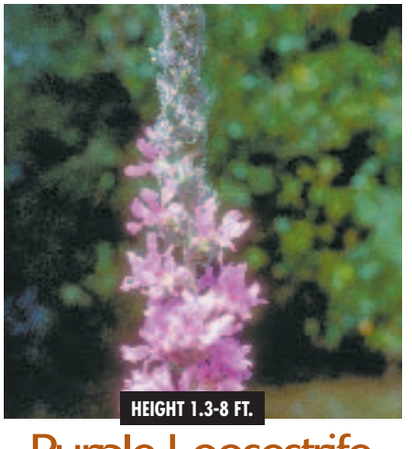
Phragmites

Diffuse Knapweed



Japanese Knotweed

Giant Knotweed



Purple Loosestrife

Sericea Lespedeza

For more infromation or to get additional copies of The Weed Watch, contact Kristi Paul, Sheridan County Weed Superintendent, PO Box 449, Rushville, NE 69360. Phone 308-327-5629