

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

Future of
Data Weed Watch
is Uncertain...Governor's Budget
Cuts Will Impact
Riparian Projects
Statewide

By Kristi Paul,NEWMAC Chairman

Nebraska Weed Management Area Coalition (NEWMAC) was formed in 2013, bringing Weed Management Areas together to pool funds and resources. NEWMAC members have completed several years of riparian grant projects including "on the ground" control, research, outreach and education. An important part of every grant project is getting landowners involved and implementing public education. *The Weed Watch* does just that and has been a valuable tool for noxious and invasive species education.

The

The Weed Watch, which was started in 2003, is dedicated to noxious and invasive species identification, information and management. It is published in both spring and fall each year. Each edition has 100,000 copies delivered to homeowners and landowners in more than 50 Nebraska Counties. While we seek grant funding to complete the publication, each Weed Management Area (WMA) and its Counties pay for the postage or insertion fees of *The Weed Watch*. Although the PRIDE WMA started the publication, NEWMAC took over the role of the publication several years ago, with Tim Conover, Custer County Weed Superintendent as editor.

Education of homeowners and landowners regarding noxious and invasive weed management is very important, so having an educational component within our grant requests is valuable. Each WMA stressed the importance of having *The Weed Watch* delivered within their counties.

The zero funds available from our grant application makes a significant impact on the publishing of the Weed Watch. The Middle Niobrara Weed Awareness Group, Panhandle Weed Management Area and Sandhills WMA have agreed to fund the fall 2024 Weed Watch, but this may very well be the last edition.

AND THIS IS WHY ...

In 2005, the state of Kansas sued Nebraska for \$72,000,000, for failure to deliver water along the Republican River Basin to Kansas.

Continued on next page.

Ariel photo of a stretch of the Platte River showing the success of spraying phragmites to clean up the river. Photo provided by Platte Valley WMA

Budget Cuts Impact Projects Statewide

Continued from previous page.

The infestations of riparian invasive weeds (introduced phragmites, purple loosestrife and saltcedar) along rivers crowd out native plants and impede the water flow. Thick monocultures of invasive weeds, along with trapped sediments and fallen trees slow the flow, directly affect plant diversity, and impede access to the water, altering wildlife habitat and recreational access. In 2007, the Nebraska State Legislature signed LB701, which established funds to implement riparian projects. The creation of the Governor's Riparian Vegetation Management Task Force, combined with funding, has led to thousands of acres of noxious and invasive riparian vegetation being cleared and controlled, resulting in increased water flow in the Republican River. Getting the water to Kansas was no longer an issue, thanks to statewide WMA projects.

The legislative funds appropriated to the Riparian Task Force and passed through the Nebraska Department of Ag's Noxious Weed Program have been distributed through grant applications submitted by weed management areas across the state. Grant projects that are funded must be completed within the 12-month grant period. Airboats, Argos, helicopters, ATVs, UTVs, and drones are now a common site across our state, with riparian area projects completed on thousands of miles of rivers and streams.

Spring 2024 had WMA groups working on grant applications with unknown funding amounts available...would it be \$706,000 or 3 million or a possible 6 million dollars? We submitted grants based on what we knew could be accomplished by our groups. On June 3rd we all waited anxiously to see if our projects would be fully or partially funded. It was a big shock to all when we got notice from the Nebraska Department of Agriculture stating there would be NO FUNDS for this grant period due to agency directives. This is a concern for our local WMAs, because their budgets are very limited, and they depend on grants to help with their large-scale projects. Weed management is a very delicate balance; lack of management for even one season can set a project back significantly. The WMAs will continue to work to seek alternative grant sources. The NWCA legislative committee will also continue to work with the Nebraska Department of Agriculture and State Legislators to seek solid funding and ensure both maintenance of existing projects and the creation of new projects continues.



Platte River from the Minden bridge showing the impact phragmites has on the river system in 2008 before work began. Photo provided by Platte Valley WMA.

Lancaster - Brent Meyer - 402-441-7817

Routhedge, Sault College, Bugwood. org; Musk Thistle, L.L. Berry,

Bugwood.org; Leafy Spurge, Chris Evans, University of Illinois, Bugwood.

Bugwood.org; Plumeless Thistle, Todd Pfeiffer, Klamath County Weed Control,

Spencer, Bugwood.org; Phragmites, Ryan Armbrust, Kansas Forest Service, Bugwood.org; Diffuse Knapweed, Sara

org; Spotted Knapweed, Catherine Herms, The Ohio State University,

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> Value, Coriental Bittersweet, Jill Swearingen USDI NPS; Medusahead, Steve Dewey, USU, Bugwood; Flowering Rush, Leslie Mehrhoff, UConn; Absinth

Wormwood, Yellow Flag Iris, Kristi Paul; Ecoregion Map, Nebraska Game and

Page 7. St. Johnswort, LL Berry, Bugwood.org; Absinth Wormwood & Cutleaf Teasel, Chris Evans Univ.

Page 6. Giant Reed, John Ruter,

Colfax - Justin Stutzman - 402-352-5459 Dodge - Larry Klahn - 402-727-2718 Douglas - Mike Reed - 402-444-4583

III, Bugwood; Sulfur Cinquefoil, Theodore Webster, USDA ARS; Bugwood; Camphorweed, Rebekah D Wallace, Univ. GA; Perennial Sow Thistle, Ohio St. Extension; Common & amp; European Buckthorn, Robert Videke,Doronicum Kft, Bugwood; Caucasian Bluestem, Mike Haddock, kswildflower.org; Common Teasel, Steve Dewey, USU; Queen Anne's Lace, Rob Rutledge, Sault College; Japanese Honeysuckle,

James Allison, GDNR, Bugwood Page 11. Field Bindweed, Woolyleaf Bursage, Howard F. Schwartz, CSU, Bugwood; Bull Thistle, Loke T. Kok, VPI Bugwood; John Cardina, Ohio St. Univ.; Scotch Thistle, Houndstongue, Steve Dewey, Utah St. Univ. Bugwood; Yellow Flag Iris, Houndstongue, Yellow Bedstraw Kristi Paul, Common Mullein, K George Beck & amp; James Sebastian, CSU:

Page 12.Canada Thistle, Rob

Saunders - Ed Sladky - 402-443-8171 Seward - Marcus Kallhoff - 402-646-0537 Washington - Jay Jensen - 402-426-6844

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

PHOTO CREDIT

Parks

UNL AIR Lab Uses Drones and Al to Manage Phragmites

Photo by Md Didarul Islam

By Kevin Steele, Graduate Research Assistant **University of Nebraska-Lincoln**

The Agricultural Intelligence Research (AIR) Lab at the University of Nebraska-Lincoln is exploring how drones and artificial intelligence (AI) can be used to detect and control invasive weeds. Dr. Yeyin Shi, an Associate Professor in the Department of Biological Systems Engineering (BSE), is leading this innovative effort. The AIR Lab team, led by Dr. Shi, includes Dr. Biguan Zhao, Md Didarul Islam, Kevin Steele, Wenxin Liu, and Angelo Leone. Dr. Shi, an expert in applying drone and AI technologies to agricultural management, brings extensive experience in digital and precision farming techniques, which have transformed crop management by boosting vields and profits while reducing manual labor and chemical usage.

These technologies, proven successful in agriculture, are now being implemented for invasive weed control. With their deep expertise in precision agriculture, the AIR Lab is well-positioned to apply these advancements to manage phragmites australis, a problematic noxious weed. Collaborating with Brent Meyer of the Lancaster County Weed Authority and Mike Reed of the Douglas County Weed Authority, Dr. Shi and her team aim to introduce these cuttingedge practices into the fight against this invasive species.

Controlling phragmites has long been a priority for local weed control authorities, but the issue has yet to receive the necessary technical innovation from industry and academia. With the recent surge in phragmites infestations, the AIR Lab team hopes their project will help control the spread of this invasive plant.

The team is developing a custom drone equipped with sensors, computers, and a precision spraving system. This drone will be capable of capturing images of an area and spraying it simultaneously. The project involves creating a powerful AI model that can identify phragmites from drone images in real time. When the drone detects a phragmites patch, it will use its spraying system to target and treat the area.

The goal of the project is to produce a drone capable of continuously detecting and spraying phragmites. The drone will "sense" by capturing images, "calculate" using the AI model to identify phragmites patches, "adjust" its flight parameters (such as location, speed, and altitude), and then "spray" the identified patches. This process will allow the drone to effectively manage phragmites infestations with minimal human intervention.

Beyond detecting phragmites, the AIR Lab team is also investigating how the spray from drones is impacted by the environmental conditions, such as wind speed and direction. A major focus is ensuring that the drone's spray effectively reaches the target area. To address this, the team is conducting laboratory experiments, field tests, and computer simulations to better understand how drone sprayers interact with their surroundings.



This research can lead to environmental-friendly and precise spraying drone technoloav.

The AIR Lab's objective is to demonstrate that this technology is effective and practical for controlling phragmites. With a successful proof of concept, the innovation could accelerate, attracting industrial and private partners to further develop and commercialize the technology.

The AIR Lab aims to show landowners and the public that drone-based sensing and spraving technology is ready for practical use. The AIR Lab has contributed to community events, showing that drone-based sensing and spraying technology has potential for practical use. If widely adopted, this technology could significantly support efforts to control phragmites and assist county weed superintendents in managing noxious weed pressures.

This project is still ongoing, with significant work remaining. The AIR Lab team is continuously collecting data and developing the AI model, hoping to produce a prototype drone within the next few years to combat invasive species across Nebraska. For more information, visit bse.unl.edu/agricultural-intelligence-lab or follow the UNL AIR Lab on Facebook, LinkedIn, or X (formerly Twitter).

MIDDLE NIOBRARA WEED AWARENESS GROUP

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AIR Lab members Dr. Biguan Zhao, Kevin Steele,

Angelo Leone, Wenxin Liu, Md Didarul Islam,

and Dr. Yeyin Shi. Photo by Dr. Yeyin Shi

Rock County - Mitch Dean - 402-925-8255



Ducks take advantage of these Rainwater Basin wetlands on a yearly basis. Photo by Rainwater Basin Joint Venture

Essential Plant ID for Rainwater Basin Wetland Landowners: Desirable and Undesirable Plant Communities

By Brody Vorderstrasse, Rainwater Basin Joint Venture

The Rainwater Basin is a shallow playa wetland landscape located in south-central Nebraska. Today, these wetlands are scattered across gently rolling grasslands and interspersed between croplands. Historically, these Rainwater Basin wetlands were fed by runoff from snowmelt and intense thunderstorms, but more importantly the growth and succession of the plants that grew in them were managed by large herds of grazing bison, elk and by periodic fires. Today, however, most of these wetlands lack the disturbance needed to create desired plant communities, allowing for undesirable plant species to dominate these playa wetlands. With over 8.6 million geese and ducks using these Rainwater Basin wetlands on a yearly basis, it's important that these wetland plant communities are managed correctly. These plant species provide the waterfowl that use them with the energy and fat reserves they need to complete their migration and reproduce on their breeding grounds.

Playa wetland plant communities are dynamic and varied, with over 200 species creating a plant community that produces large amounts of seeds to provide migrating waterfowl with high quality food. Common moist-soil plants that are desired include smartweed, barnyard grass, spikerush and rice cut grass. Bare soil, such as mudflats and shallow open water areas, are also desirable landscapes within a playa wetland. These desirable plant species are widespread across Nebraska and, with a combination of all 4 plant species, a playa wetland can support migrating waterfowl all year long.

Unfortunately, playa wetlands are not always dominated by the desirable plant communities that provide waterfowl with the most benefits. Today's playa wetlands are influenced by a number of different factors. Influences like drought, runoff from crop fields, and human alterations can all affect the plant communities that we see in playa wetlands. That shift in disturbance can cause undesirable plant communities to take over and dominate the wetland landscape. There are several plant species that are considered undesirable and that can have a negative impact on the desirable

moist-soil plant communities. Some of those species include reed canarygrass, hybrid cattail, river bulrush, and phragmites. Different tree species can also be considered undesirable if left unmanaged. All these species produce less seeds than the desirable plant species and invade on open water that waterfowl need to escape predators and loaf on during the day.

Most wetland management activities are determined by the undesirable plant species that are found in the wetland. Management activities that can be used to help promote desirable plant species and set back invasive species include grazing, prescribed fire, herbicide application, disking, having/mowing and water level manipulation. In most cases, a combination of multiple management activities is needed to create a varied moist-soil plant community and to properly manage invasive species. Any management of the wetland plant community, regardless of what management technique you choose, is better than no management at all!

More detailed information on desirable/undesirable plant species, plant ID, and wetland management techniques can be found at RWBJV.org.



The Rainwater Basin is a shallow playa wetland landscape located in south-central Nebraska. These wetlands are scattered across gently rolling grasslands and interspersed between croplands. Photo by Rainwater Basin Joint Venture

NORTHEAST WEED MANAGEMENT AREA

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Cedar - Justin Heikes - 605-933-0433

Dakota - Scott Stolze - 402-632-5006 Dixon - Mike Elton - 402-635-2129

Holt - Bill Babutzke - 402-340-6319 Knox - Steve Banks - 402-358-0208

Pierce - Steve Gathman - 402-992-8956 Wayne - Doug Deck - 402-565-4458

Scotch Thistle (Onopordum acanthium L.) "Christmas Tree of the Thistles"

By Seth Tausan Sheridan County Weed Superintendent Panhandle Weed Management Area (PWMA), Chair

When people ask me, "what is that giant thistle looking plant," I always in return ask, "The one that is about the size of a Christmas Tree?" If the answer is yes, I'm certain that it is Scotch thistle they are referring to.

Scotch thistle is a non-native biennial forb that can behave as an annual or short-lived perennial. Like other thistle, it is a member of the Sunflower (Asteraceae) family. Scotch thistle was introduced as an ornamental plant from Eurasia in the 1800s. It reproduces only by seeds. Less than 20% of the seeds germinate, but they can stay viable in the soil for up to 20 years. The first year it forms its rosette, second year it bolts to produce flowering stock, typically mid-summer (June-August). The flowers are purple to white in color. Each plant produces 1 to 7 flower heads which can produce 8,000 to 40,000 seeds. Seeds are spread by wind, humans, livestock, and wildlife. Therefore, it is important to keep Scotch thistle from going to seed.

Scotch thistle has a taproot creating a solid base that can grow 2 - 6' tall, however there have been recordings of plants reaching as tall as 12', with a width of up to 5'. It is blueish grey in color because of the hairs covering the leaves. The leaves have an alternating pattern from the stalk, are oblong and lobed with yellow spines and can be up to 20" long. Their stems are spiny and can become rectangular with age.

Scotch thistle prefers sites near ditch banks and rivers, but also infests pastureland, crops, and roadsides. Large infestations create an impenetrable barrier to man and can nearly eliminate forage use by livestock and big game species such as deer and elk. The control of Scotch thistle starts with good grazing management and attention to disturbed areas where the plants can become established. Small infestations should be eradicated before they spread.

METHODS OF CONTROL:

Prevention: The best and most cost-effective method. Monitor your land and destroy single plants or new infestations.

This is a photo of a small patch of Scotch Thistle. Photo by Leslie J. Mehrhoff, University of Connecticut, Bugwood.org Mechanical Control: Mechanical methods of control such as mowing will not kill the plant but will lessen the seed production if it keeps the seed heads from maturing. In order for mowing to prevent seed production, it must be done immediately prior to flowering. If mowing is done too early, it may only delay flowering, and if mowing is done too late, viable seeds may still form. Small infestations can be eradicated if the landowner digs all the plants on their property. The plants must be cut off below the soil surface and no leaves can remain attached or the Scotch thistle will grow back. A blooming plant that gets chopped or mowed can still produce viable seeds.

Herbicide Control: Herbicides can be used to effectively control Scotch thistle. Herbicide recommendations can be found in the University of Nebraska Extension's EC-130 guide for weed, disease, and insect management or by calling your local County Weed Superintendent. All herbicide treatments should be applied at the rosette stage of the plant. Generally, herbicide applications are most effective in early spring or fall after a light freeze.

Biological Control: At this time, there are no biological control methods available for the control of Scotch thistle. Early grazing with sheep or goats can reduce seed production, however, an herbicide follow-up treatment may be necessary to control plants that survived the grazing.

Scotch thistle is more prevalent in the western part of the state, particularly the Panhandle. In addition to the twelve weeds that have been declared noxious in Nebraska, every county has the option to petition the Director of the Nebraska Department of Agriculture to add additional weeds. Scotch thistle is on the "County-Added Noxious Weed" list in Banner, Cheyenne, Dawes, Morrill, Kimball, Scottsbluff, Sheridan, and Sioux Counties. In these counties, landowners are required to control Scotch Thistle as well as other "county added" and state listed noxious weeds.

Remember, "Good neighbors control noxious weeds." For more information or control recommendations contact your local county weed superintendent. Early detection and a rapid response is the cheapest/easiest way to go.

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& Garden Counties Brent Fletcher 970-290-4909 Dawes County Dan Wordekemper 308-432-3056

Kimball County Rick Wangler 308-235-2681 Sioux County Nick Sanderson 308-668-9453

Invasive Plants Watch List:



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

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



CATEGORY 1: Future Invasive Species

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









Flowering Rush

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

2024

CATEGORY 2: Shortgrass Prairie Ecoregion

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



Absinth Wormwood



Dalmation Toadflax



Houndstongue



Yellow Flag Iris

CATEGORY 2: Sandhills Ecoregion



CATEGORY 2: Mixed grass Prairie Ecoregion

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



Perennial Sow Thistle



European Buckthorn



Common Teasel

CATEGORY 2: Tallgrass Prairie Ecoregion



ABSINTH WORMWOOD AMUR HONEYSUCKLE AUSTRALIAN BEARDGRASS **BLACK KNAPWEED** COMMON AND EUROPEAN BUCK-THORN COMMON TEASEL **CUTLEAF TEASEL** FLOWERING RUSH **GIANT REED** HOUNDSTONGUE

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

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

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

Managing Soapweed Yucca

Soapweed yucca can infest pastures and rangeland, reducing beneficial plant populations potential impact.

Reprint from NebGuide University of Nebraska-Lincoln Extension

By Stephen L. Young, Extension Weed Ecologist Noel L. Mues, Extension Educator Douglas L. Anderson, Extension Educator

History and Biology

Soapweed yucca (Yucca glauca Nutt.), hereafter referred to as yucca, is a native perennial shrub found throughout much of Nebraska and the Great Plains including central Canada and the Texas Panhandle. Prior to European settlement, Native Americans used yucca for food, fiber, and shampoo. It is used in landscapes as an ornamental, but generally is considered a nuisance in pastures, ranges, and rightsof-way. It can reach densities of up to 2,000 plants per acre.

Moderate to dense populations of yucca can decrease the quality and availability of forage, which negatively affects livestock and wildlife. The erect, upright leaves of yucca can injure animals and humans. Yucca are hardy plants and well adapted to surviving drought, fire, and grazing. The root system is well adapted to water storage, quickly consuming the rainfall that the leaf structure directs toward the center of the whorl. Its extensive taproot and rhizomes allow it to regenerate even after completely losing the top of the plant.

Yucca is classified in the Agavaceae family. Among the many members of the Agavaceae are the Hosta genus containing common ornamentals and the Agave genus that includes sisal fiber. Several species of yucca exist, including soaptree yucca (*Y. elata*), which is found in Colorado, New Mexico, and Arizona. Other yucca species include Spanish Bayonet (*Y. aloifolia*) and Curve-Leaf Yucca (*Y. recurvifolia*). Adam's Needle (*Y. filamentosa*) and soapweed yucca are the only species found in Nebraska. Yucca species are evergreen and most prefer medium to coarse soils in arid to semi-arid climates.

The seasonal development of established yucca plants begins in May with flowering, followed by fruit ripening in July, and finally seed dispersal in September.



Great Plains Yucca plants. Photo by Howard F. Schwartz, Colorado State University, Bugwood.org

New plants are produced either by seed or ramets, which are clones of the parent plant produced from lateral buds or rhizomes near rosettes. Typically, yucca colonizes a new site by seed, after which vegetative reproduction (i.e., ramets) is the primary means of establishment and can lead to heavy infestations.

Identification

Yucca is easily distinguished by its large, erect leaves and clumping growth habit. Although it may appear to be related to cactus, it is actually not closely related, nor is it even a succulent plant. Plants may grow as high as 4 feet and tap roots as deep as 20 feet.

Yucca flowers are greenish-white to cream-colored and may have a slight tinge of purple.

Flowering occurs from May through July in a raceme that extends above the main plant canopy. The circular or triangular, black, semiglossy seeds are encapsulated in a pod that is cylindrical and elongated. The leaves are closely alternate and radiate from the stem in a whorl shape with new leaves appearing in the center. The blades are simple, linear and form a tip, which is a hard, sharp point. The blue-green coloration of the leaves is an important survival adaptation, allowing the plant to reflect heat during dry periods.

Impacts of Yucca

Dense yucca populations can infest pastures and rangelands, reducing production of livestock and desirable plant types. The loss of native or desirable plants is difficult to assign a value, but can be seen indirectly through reduced wildlife. In some situations, yucca can provide protection for small mammals and birds, but in general, it offers little value for larger animals, such as elk, deer, and pronghorn. The nutritional content of yucca is 1-2 percent crude fat, 3-5 percent protein, and 14-16 percent fiber.

The occurrence of individual yucca plants can be beneficial when surrounded by a mix of native or desirable plant types. Birds and small mammals use yucca for food, shade, and nesting habitat year round. If forced, cattle, deer, and pronghorn will eat the flowers and fruits and occasionally rely on the stems and leaves in winter and during severe drought.

Distribution

Yucca occurs in rangeland and prairies across Nebraska, especially in the Sandhills region. Distribution in Nebraska is largely dependent on precipitation as yucca prefers the drier western regions of the state. In wetter areas, particularly in southeast Nebraska, more acres are in production agriculture, which is unfavorable to yucca.

Management of Yucca

Several tools, including mechanical, chemical, and cultural methods have been analyzed for controlling yucca.

Continued on next page

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Mechanical

Yucca can be mowed or shredded with high powered equipment; however, the long-term success of this practice is limited since yucca can regrow from the rhizomes and taproot. A digger or ripper can completely remove yucca, but this can be costly as it requires significant time and fuel.

Chemical

Effective control of yucca with herbicides is highly dependent on timing and placement. A directed spray using Remedy® and diesel fuel or vegetable oil is effective for controlling yucca. By mixing Remedy (15 percent) with diesel fuel or vegetable oil (85 percent), an application to the center of the whorl with a single spray nozzle (5500-X1) will allow the herbicide to be absorbed directly into the meristematic tissue for complete uptake. It is important to add the herbicide to the spray tank first and then add enough oil to get the total volume desired. In addition, the duration of application to the whorl must be for at least two seconds. Use a timer or slowly count (e.g., "21, 22") to ensure a two-second application. Remedy RTU, which is a "premix" of Remedy and vegetable oil is also available at a higher price.

The whorl spray with Remedy plus diesel fuel is most effective if applied during the growing season. At up to two months after treatment (MAT), control was 100 percent. After two years, excellent control was achieved with this mix of chemical and diesel fuel. Other herbicides are labeled (Cimarron® MAX, Velpar® L) or have been tested (Tordon® 22K) for control of yucca, but reports indicate inadequate control (less than 90 percent) based on application method or active ingredient.

Broadcast applications of herbicides, such as Roundup Ultra®, Reward®, and Roundup Ultra or Reward® plus Ally® had varying rates of control at eight weeks after treatment. Control of yucca was 48 percent with 6 quarts of Roundup Ultra®, which was greater than for Reward®. Adding Ally® improved control; however, it was still less than 70 percent regardless of timing.

In summary, broadcast herbicide applications are less than satisfactory for the effective control of yucca and can cause considerable damage to surrounding grasses and forbs. Spot treatments are usually a better control option for yucca.

Cultural

The use of cultural techniques, such as hand removal and fire, to control yucca are largely ineffective, except in localized areas. Yucca can recover guickly from fire by re-sprouting. In most cases, fire can actually stimulate growth with up to a 17 percent increase in the number of post-fire sprouts per plant. Fire intensity plays a role in survivorship and recovery of yucca, with low-intensity burns allowing greater survival. In rare cases of severe fires, yucca populations can be severely reduced due to damaged plant and seed.

Biological

The yucca moth (Tegeticulla yuccasella) is essential for pollination of yucca. After it lays an egg on the ovary of the yucca flower, the moth moves to the stigma and rubs a ball of pollen on the pollen receptors. After egg hatch, the larvae damage the developing seed. The extent of damage depends on how many eggs were laid within the yucca flower. Typically, there are far more seeds than larvae so the yucca moth is largely ineffective as a biological control. The moth is beneficial, however, as it is the only pollinator of yucca, and yucca species are the only hosts for the moth larvae.

In addition, cattle grazing is a form of biological control often used in winter and sometimes in summer; however, summer grazing can cause an increase in yucca. Researchers at the University of Nebraska– Lincoln West Central Research and Extension Center in North Platte are studying the extent to which cattle grazing is detrimental to yucca.

Revegetation

An effective long-term control solution is the removal of yucca and replacement with native perennial plant species. Although combining one of the previously mentioned control tools with a planting of native perennial grasses can be expensive, the economic returns and environmental benefits from increased productivity and habitat diversity, respectively, can be significant.

Summary

Yucca is difficult to control in pasture and rangeland situations, but with the right treatment(s) that removes or kills both aboveground and belowground structures, success can be achieved. In the case of chemical control, care must be taken to match the size of yucca with the herbicide rate and mixture needed for effective control.

Weed control with herbicides alone often results in reinfestation of the pasture or rangeland. Without plans to revegetate following the elimination of yucca, repeat applications will be necessary to provide control for any length of time. Long-term weed control requires a combination of treatments that promote healthy, dense forage that can successfully compete with and prevent the establishment of yucca.

NOXIOUS WEEDS MUST BE CONTROLLED

You are required to control noxious weeds on your property.

The noxious weeds are: Musk Thistle, Plumeless Thistle, Canada Thistle, Leafy Spurge, Knapweed (spotted and diffuse), Purple Loosestrife, Saltcedar, Phragmites, Knotweed (Japanese and Giant) and Sericea Lespedeza. Notice is hereby given this 19th day of September, 2024, pursuant to the Noxious Weed Control Act, section 2-955, subsection 1(a), to every person who owns or controls land in Nebraska, that noxious weeds being grown, or growing on, such land shall be controlled at such frequency as to prevent establishment, provide eradication, or reduce further propagation or dissemination of such weeds.

Upon failure to observe this notice, the county weed superintendent is required to:

1. Proceed pursuant to the law and issue legal notice to the landowner of property infested with noxious weeds and giving such landowner 15 days to control the noxious weed infestation. Conviction for noncompliance may result in a \$100 per day fine to the landowner, with a maximum fine of \$1,500; or

2. Should more immediate control be required, proceed pursuant to the law and have the weeds controlled by such method as he/she finds necessary, the expense of which shall constitute a lien and be entered as a tax against the land, and be collected as other real estate taxes are collected, or by other means, as provided by law.

Also, the public is notified that noxious weed seed and propagative parts may be disseminated through the movement of machinery and equipment, trucks, grain and seed, hay, straw, nursery stock, fencing materials, sod, manure, and soil as well as articles of similar nature. Methods of treatment have been prescribed by the Director of Agriculture and may be obtained from the county weed control authority.

By Order of County Weed Control Authorities of Nebraska.

	SOUTHWEST WEED MANAGEMENT						
Project Coordinator	Chase County	Dundy County	Frontier County	Hayes County	Hitchcock County	Perkins County	Red Willow Count
John Rundel	Brandon Beard	Michael Schrader	David Luke	Keifer Messersmith	Mike Erickson	Michael Dolezal	Sonya Prentice
785-443-0646	308-882-7520	308-423-2652	308-367-8304	308-367-6650	308-334-5251	308-352-7955	308-345-4230

Crownvetch (Securigera varia)

Bv Josh Nelson Sarpy County Weed Superintendent

Crownvetch is a priority invasive plant species of the Tallgrass Prairie Region according to the Nebraska Invasive Species Council. This species is scattered throughout the many diverse landscapes in the state. In eastern Nebraska, many of the infestations span across right of way and local parks.

It was believed to have been introduced through seed mixes used for erosion control. Due to this, many infestations can be noticed on roadsides as well as highway interchanges. This plant gained popularity through its ability to grow in many soil types. It does not take long to create a monoculture which out competes native vegetation. The ability to cover is a sought-after quality as it can fill vegetative voids in freshly disturbed soils. Eastern Nebraska is in a constant state of development so there is plenty of opportunity to find fresh dirt.

Crownvetch is considered an

herbaceous perennial legume. Simplified, this grows seed pods and creates a multi-year flowerful growth pattern. It forms in dense clusters which can spread through seed and rhizomes. The multi-factor growth ability makes crownvetch a great candidate to be an invasive plant. These characteristics are shared with many of the noxious weeds in Nebraska. It grows up to 2 feet tall, with branches up to six feet long, and produces flowers from May into the fall. Since the flowering stretches across multiple seasons, it is easy to spot in the native landscape. Flowers are either a white or pink variation. The seed pods create crown like structures according to the Nebraska Invasive Species Council (NISC). The seed pod structure is a contributing factor to the name. The shape also makes it easy to distinguish from other vetch types.

Great forage ability does not always outweigh environmental impact. According to the USDA, crownvetch produces "palatable high-quality forage for all classes of livestock either as hay or pasture". This compares to the noxious weed Sericea Lespedeza because it also has great forage ability but provides a negative impact on desirable plant species. On a side note, Sericea has also been planted on Nebraska roadsides through

> contaminated seed mix. Forage ground is at a premium so farmers and ranchers are doing all they can to combat unwanted vegetation.

> of Agriculture (NDA) has been doing its part to ensure seed mixes are clear of contaminated seeds. There will be a decline in invasives because of work being done. Landowners are encouraged to purchase approved mixes. The Natural **Resources Conservation Service** in your area is a great guidance tool. Trevor Johnson from NDA encourages landowners to read the label to ensure the mix fits

the intended application.

Control can vary based on application sites. The EC-130 Guide for Weed, Disease, and Insect Management in Nebraska has a few options. For infestations on land enrolled into the Conservation Reserve Program (CRP), the herbicide recommended is Pursuit. Plateau is recommended for almost every other area besides aquatic sites. The UNL Extension office will have plenty of resources for pasture management. Reach out to your local weed control authority for identification tips and recommendations.

Citations https://neinvasives.com/species/plants/crownvetch https://plants.usda.gov/ https://extension.unl.edu/

Weed Free Forage

NAISMA

WEED FREE

Certified

By Todd Boller, **Fillmore County Weed Superintendent** NAISMA Board Director Member representing Nebraska **Co-Chair for Weed Free Products for NAISMA**

There are many ways to help control the spread of invasive vegetation. Having clean hay is one of the ways and can come at a cost benefit for landowners. Initially, the program targeted forage used on the U.S. Forest Service and Bureau of Land Management lands, but the market for weed-free forage continues to grow with more federal and state agencies requiring its use. Straw used in soil erosion reclamation projects or animal bedding must also be noxious weed-free.

Producers don't have to treat clean fields any differently than before. They do have to have an inspector come out and certify the field as regionally weed-free before the hay or straw is cut.

The inspector can also advise on how to bring a field into compliance. Each field must be inspected 10 Days or so before harvesting. If the field meets the requirements of the Weed Free Forage Standards the inspector will complete the required paperwork and print tags or acquire the twine needed to mark each bale as certified.

If you would like more information, please contact your County Weed Control Superintendent.

Certification is a win-win situation, as producers may get a better price for their forage while also preventing the spread of invasive weeds.

TWIN VALLEY WEED MANAGEMENT AREA • TWINVALLEYWMA.COM

Coordinator Vacant

Adams County Eric Walston 402-461-7173

Clay County **Greg Shuck** 402-762-3652 Franklin County Doug Eckhardt 308-746-4022

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 Thayer County Nick Elledge Brian Schardt 402-879-1900 402-365-4366

Webster County Brian Pedersen 308-470-1603



Crownvetch taken at Zorinski Park in Omaha, NE. Photo by Josh Nelson

COUNTY-ADDED NOXIOUS WEEDS



Kristi Paul, Panhandle Board Member.

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

Banner Garden Morrill **Box Butte** Cheyenne Scotts Bluff Deuél Sheridan

FIELD BINDWEED

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

SCOTCH THISTLE

Banner Cheyenne Dawes Morrill Kimball **Scotts Bluff** Sheridan Sioux

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



COMMON TEASEL 2-8 ft tall Lancaster Pawnee **Biennial** - spreads



Saline

seed.



COMMON MULLEIN Cheyenne County

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



WOOLYLEAF BURSAGE Banner

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

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

YELLOW **FLAG IRIS**

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



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

Rock Brown 1.5 to 6.5 feet tall. **Biennial - spreads**

BULL THISTLE

only by seeds.

NEBRASKA'S NOXIOUS WEEDS It is to the formation of the second sec

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.



For more information or to get additional copies of the Weed Watch, contact Tim Conover, 431 S. 10th Ave., Broken Bow, NE 68822