

Noxious Weed Control Authority

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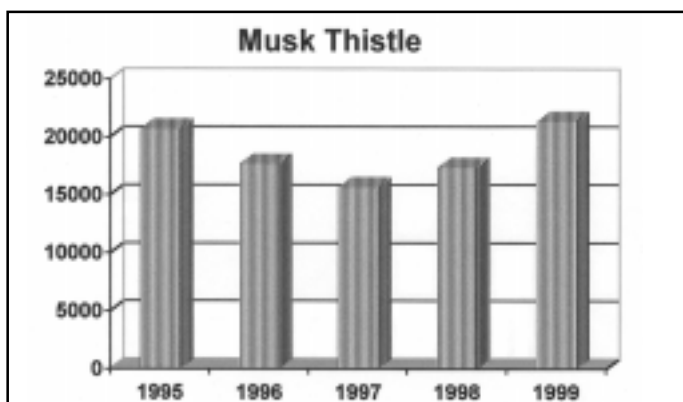
Weed Awareness



Year in review

The Weed Control Authority is responsible for administering the State Noxious Weed Control Act county-wide. The authority also administers the Weed Abatement Program in the City of Lincoln as a result of an interlocal agreement between the city and county.

Both the noxious weed and weed abatement seasons started early due to the mild spring temperatures and good soil moisture conditions that was ideal for germinating weed seeds. There was a 19 percent increase in weed abatement violations over 1998 requiring 800 additional inspections. The 5,333 acres of musk thistle infestations found were more than double than that found in 1998. There was an estimated 23 percent increase in the total acres of musk thistle in the county.



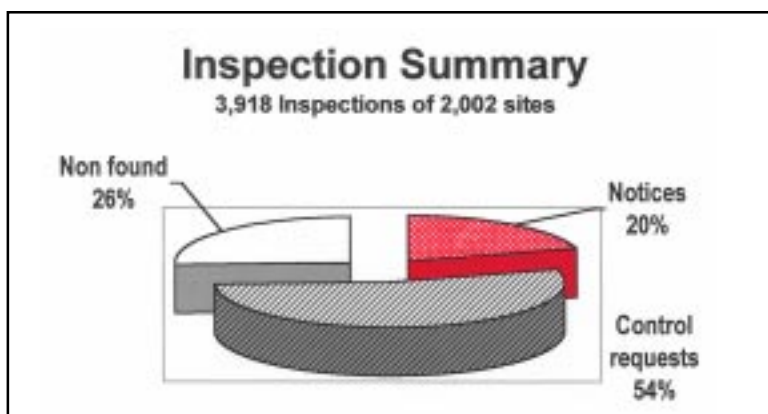
The fall was very dry which reduced the opportunity for fall noxious weed control. The dry weather decreased the amount of germination and reduced the effectiveness of herbicides. There were 339 problem sites inspected in the fall. Of these sites, 136 had only a trace infestation and no infestations were found at 100 sites. Of the 240 infested sites, 177 were deferred until spring for better conditions for control.

Inspection activity

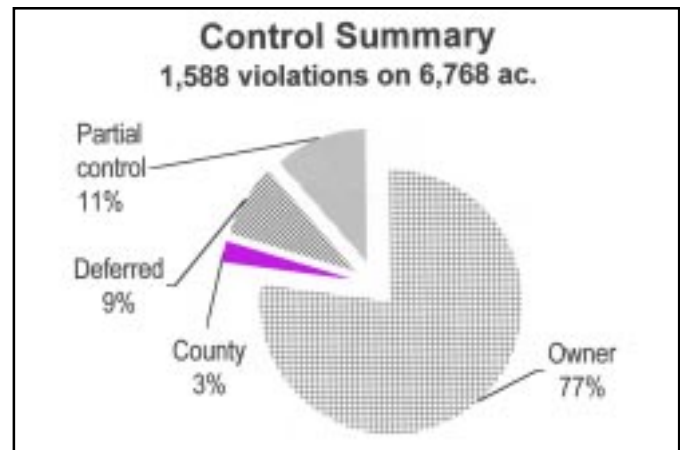
A total of 9,442 inspections have been made on 4,387 sites on 34,743 acres this year. Inspection activity for the year:

Noxious Weeds

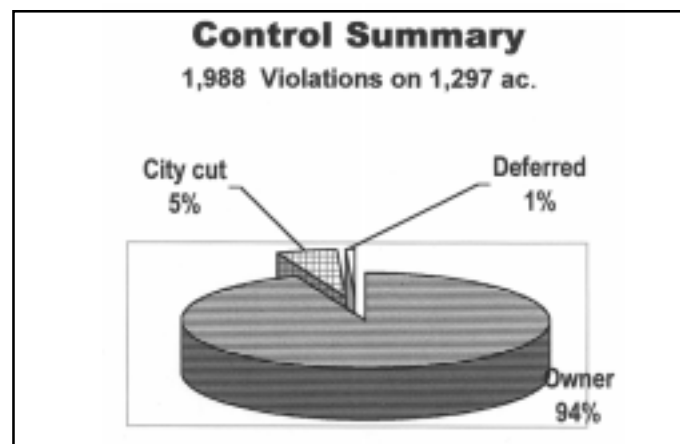
The inspectors made 3,918 inspections of 2,002 sites. They found 1,588 violations on 6,768 acres on the 27,266 acres inspected.



Landowners responded very well even with the difficult control conditions. Legal notices were required on only 27 percent of the 1,214 control requests. Owners controlled almost 85 percent of the infested acres not deferred.



Three percent of the acres were controlled by inspectors or force controlled.



Weed Abatement

Almost 2000 violations were found as a result of inspecting 2,385 sites. After being notified of a violation, 94 percent of the owners cut and removed overgrown vegetation. Of this, 110 were force cut by contractors.

Biological Control

The musk thistle head weevil population has increased enough over the past 30 years that they are reducing the amount of viable seed production. They have been found in 70-80 percent of flowering musk thistle heads the past two years.



A.czwalinae adult on leafy spurge

Three biological control sites have been established in the county. Two for leafy spurge and one for purple loosestrife. The hope is that these areas can be harvested to make additional releases resulting in beneficial populations in the future.

Control recommendations for musk and plumeless thistle



Early spring is a good time to control musk and plumeless thistles when they are in early, actively growing rosette stages. Scout and control the infested area on a weekly basis until you have all the plants killed. Assume there are "escapees" – plants you didn't see the last time. Musk and plumeless thistles are easily controlled in

small areas or lightly scattered areas by hand digging or pulling the entire plant. Sever the root at least one inch below the soil surface. If the soil is loose or wet, the entire plant is easily pulled. Use necessary protective clothing. **BEFORE USING ANY HERBICIDE, ALWAYS READ AND FOLLOW LABEL DIRECTIONS.**

Roundup is not the preferred herbicide to use.

When using hand sprayers, for 1 qt/acre recommended rate add 1.5 tablespoons (0.75 oz) herbicide per gallon of water. One gallon will cover about 1000 sq. ft. Example: recommended rate of 2 qts/acre converts to 3 T/gal of water (1.5 x 2 qt = 3 T).

Cropland

For crop land, use a broad-

leaf herbicide labeled for the crop. For fallow land, 2,4-D LVE at 2# active ingredient/acre may be used. Hand digging or tillage, severing roots two inches below the surface will also provide control.

Pasture, CRP and non-agricultural land

In seedling and rosette stage, Grazon P+D at 3 pt/acre may be used on pasture and CRP land. Other options are Clarity 8 oz + 2,4-D LVE 1# active ingredient/acre; or hand digging or tillage severing roots two inches below the surface. Once the thistles have bolted or are blooming, Escort .3 oz/acre + surfactant + 2,4-D LVE 1# active ingredient/acre; or Clarity 2 pts + 2,4-D LVE 1# active ingredient/acre or hand digging

or tillage severing roots two inches below the surface. Escort does reduce the formation of viable seed. Once the thistles have bolted (formed flower stalks) or flowering occurs, they are much more difficult to control. Once flowers mature and seeds have formed, minimize the spread of seeds by removing heads and burning them or mowing with a sickle-bar mower and then gathering and burning mowed debris. Always comply with any burning restrictions.

Alfalfa

For alfalfa there are no herbicides labeled for broadcast spraying of musk and plumeless thistles. Spot spraying thistle plants with 2,4-D is an option. Remember these herbicides may kill any alfalfa plants contacted.

Another option is hand digging or pulling individual plants. If alfalfa is cut prior to thistle flowering, any regrowth may be easily spotted and treated. **IF THISTLES ARE ALLOWED TO FLOWER, A QUARANTINE WILL BE ISSUED.** If the thistle infestation is scattered throughout or moderate to severe, consider breaking up the alfalfa and planting the field to a different crop. The alfalfa could be cut for hay prior to thistle flowering. Any regrowth could be killed with 2,4-D + Banvel or Roundup may be broadcast applied. Then a row crop no-tilled into the dead alfalfa residue. Check with the US Natural Resources Conservation Service office before proceeding if the field is part of a conservation compliance plan.



Weed Awareness

North American weed conference

Nebraska has the honor of hosting The Eighth Annual North American Weed Management Association Conference and Trade Show. This conference is being held at the Arbor Day Farm Lied Conference Center, Nebraska City, Nebraska August 8-10, 2000. Russ Shultz is serving as the program chairman.

The North American Weed Management Association (NAWMA) is a network of professional weed managers who are involved in implementing any phase of a local, state, provincial or federal weed law. The mission of NAWMA is to provide education, regulatory direction, professional improvement and environmental awareness to preserve and protect our natural resources from degrading impacts of exotic, invasive noxious weeds.

The theme of this conference is "More invaders are coming! Are you ready?" Across the United States the major thrust of the noxious weed control effort has been directed at noxious weeds that are already well established. In most cases, control efforts do not include

aggressive control of newly found, highly invasive weeds. Preventing the establishment of these invasive weeds is the most efficient and effective approach at weed control. The conference will emphasize the establishment of a framework at the national, state and local level for early detection and rapid response to highly invasive weeds.

Presentations will include highlights of the newly developed National Invasive Species Management Plan and Australian experience in fighting newly found invading weeds. Other speakers will address plant data systems, early response efforts, GIS/GPS in weed management, the Nebraska program and other related topics. It is also an excellent opportunity for one-on-one interaction with other attendees about their experiences.

If you desire more information, call 441-7817. Conference information is available now and registration information will be available about June 1 at www.nawma.org. Room reservations should be made now to assure lodging at the conference site.

Noxious weed control on public lands

The weed control authority maintains contact with 30 different public land managers in a coordinated effort of noxious weed control. They represent the following agencies and departments:

City of Lincoln

- Airport Authority
- County/City Property Management
- Lincoln Electric System
- Lincoln Public Schools
- Parks and Recreation
- Public Works & Utilities

County

- County Engineer

State of Nebraska

- Air National Guard
- Army National Guard
- Education Lands & Funds
- UNL Landscape Services
- Department of Roads
- Department of Corrections

- Game & Parks Commission
- Other**

- Lower Platte South NRD
- NE Public Power District

Each of these land managers has a noxious weed control program. A meeting was held with all of these managers discussing noxious weed control and management. They all have committed significant resources to planned on-going noxious weed control on property that they own or control. Names of contacts are kept current. Two-way communication is maintained throughout the year. When there is a need to request some follow-up control work of any of these land managers they provide immediate response. The efforts of these land managers are a key part of keeping noxious weeds under control in the county.

Adopt-A-Clean Road and noxious weed control

The Lancaster County engineer's office introduced the Adopt-A-Clean-Road program in 1991. The program is designed to clean litter from county roadsides. Volunteers "adopt" a road

segment and agree to collect litter along their adopted miles for a minimum of two years. Last year 65 permits were active, covering approximately 148 miles of county roadsides.

What are noxious weeds?

Noxious weed is a legal term used to denote a destructive or harmful weed for the purpose of regulation. These non-native plants aggressively compete with desirable plants and affect man, livestock and wildlife. This not only directly affects landowners, but erodes the tax base for all residents. The business of noxious weed control is everyone's concern and their control is to everyone's benefit. Effective control needs to include controlling the existing infestations and preventing new infestations. The Director of the Nebraska Department of Agriculture establishes which plants are noxious and the control measures to be used in preventing their spread. The following non-native weeds have been officially designated as noxious in Nebraska:

- Canada Thistle (*Cirsium arvense* L. Scop.)
- Diffuse Knapweed (*Centaurea diffusa* Lam.)
- Leafy Spurge (*Euphorbia esula* L.)
- Musk Thistle (*Carduus nutans* L.)
- Plumeless Thistle (*Carduus acanthoides* L.)
- Spotted and Diffuse Knapweed (*Centaurea maculosa* Lam.)

Following is a list of those noxious weeds commonly found in Lancaster County, along with a brief description and growth habit

Canada Thistle (*Cirsium arvense* L. Scop.)



Life span: perennial

Stems: 2 to 4 feet tall; hollow; erect; branched above; no leafy wings or spiny margins on upper stems below flowers.

Leaves: moderate to coarsely lobed, usually wavy with spiny margins. Upper side light to dark green, shiny, hairy to hairless.

Inflorescence: small 1/2 to 3/4 inch diameter rose purple, sometimes white color, male/female flower on separate plants.

Roots: extensive vertical and horizontal root system.

Leafy Spurge (*Euphorbia esula* L.)



Life span: perennial

Stems: 1 to 3 feet tall; thickly clustered; erect; branched at the top; milky white sap.

Leaves: long and narrow, 1/4 inches wide and 1 to 4 inches long.

Inflorescence: flower very small, surrounded by showy yellow-green heart-shaped bracts.

Roots: deep, spreading, brown with numerous pink buds which may produce new shoots or roots.

Musk Thistle (*Carduus nutans* L.)



Life span: biennial or occasionally an annual. Rosette formed first year.

Stems: up to 6 feet tall; main stem and major branches are hairless. The stem bearing flower head is covered with fine gray hair. The first few inches below the flower head has no leaves attached.

Leaves: dark green, prominent light green midrib, usually smooth or hairless on both sides. Deeply lobed with spiny margins up to 20 inches in length.

Inflorescence: large, solitary 1 to 2-1/2 inches in diameter, usually nodding slightly. Deep rose or purple color. Average plant produces 5,000 to 10,000 seeds; some up to 20,000 seeds.

Plumeless Thistle (*Carduus acanthoides* L.)



Life span: biennial or occasionally an annual. Rosette formed in first year.

Stems: 1 to 4 feet tall, leafy to the base of flower heads.

Leaves: dark green with light midrib. Leaf surface sparsely hairy on top and hairy beneath. Leaves deeply lobed, with narrow spiny margins.

Inflorescence: solitary in cluster of two to five, blooms 1/2 to 1 inch in diameter, erect and usually not drooping.

Roots: stout, fleshy, taproot.

Source: Weeds of Nebraska and the Great Plains, published by the Nebraska Department of Agriculture.

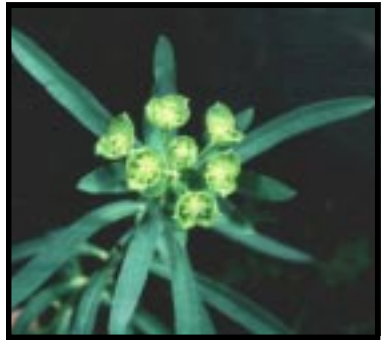
Packets are distributed to each volunteer group by the county engineer's office. Included in each packet is information about noxious weeds in Lancaster County. By studying

this information, the Adopt-A-Clean Road sponsors become aware of the noxious weeds within the county. They are asked to report any and all infestations found along their

adopted county roadside to the Weed Control Authority office. The county engineer's staff then provides the needed control of the weeds.

Leafy spurge control recommendations

It is extremely difficult to achieve long-term control of leafy spurge. The most cost-effective control method depends on the size and location of the infested area. Small patches of leafy spurge can be permanently eliminated with a persistent



herbicide program. However, all areas will require continued control measures. This plant spreads by underground roots and there is always a fringe area of younger plants that do not bloom. There are also roots underground that extend beyond the younger plants. A 15-foot perimeter should be treated around leafy spurge patches to control seedlings and spreading roots. Treated patches should be watched carefully for at least eight years and any regrowth or seedlings should be aggressively retreated.

Chemical control

The key to controlling leafy spurge is early detection and treatment of the initial invading plant. Because the weed is difficult to eradicate, a persistent management program is needed to control top growth and to gradually reduce the nutrient reserve in the root system. The most commonly used herbicides to control leafy spurge include Tordon 22K and 2,4-D. Plateau

has been granted a special labeling for use on pastureland and CRP as well as other non-ag situations. These herbicides are selective for broadleaf weed control and generally do not harm grasses when applied at recommended rates. Plateau DG is available as water-soluble eco-packets used for weed control in native grass and wildflower establishment and other non-crop areas.

Glyphosate (Roundup) is a nonselective herbicide that controls both grass and broad-leaf weeds. **BEFORE USING ANY HERBICIDE, ALWAYS READ AND FOLLOW LABEL DIRECTIONS.**

Timing herbicide applications

Herbicides should be applied to leafy spurge at the proper growth stage so optimum control can be achieved. Spring herbicide applications are most effective when applied about June 1 when the true flowers (not the yellow bracts) begin to appear on the leafy spurge plant. The optimum treatment time ends when the seeds begin to mature. Fall is also an excellent time to control leafy spurge. Fall regrowth will begin in leafy spurge in late August or September. During this time, carbohydrates are being transported to the roots for winter storage; herbicide translocation to the roots should also increase resulting in improved control.

Small infestations

Plateau DG eco-paks are for the acreage owner or for smaller infestations. One eco-pak will cover two acres at a rate of 4 oz/acre. Roundup Pro as a spot treatment is also effective.

Plateau may be applied 12 oz/acre, fall only, or 8 oz/acre in the fall followed by 4 oz/acre in the spring.

Cropland

Use only those broadleaf herbicides listed on the label for the intended crop(s).

Pasture, range and cropland

Plateau is quite effective for controlling leafy spurge. It may be applied as one application in the fall at a rate of 12 oz/acre or a split application of 8 oz/acre in the fall, followed by a spring application at a rate of 4 oz/acre. At no time should you apply more than 12 ounces of Plateau in a one-year period. Tordon 22K is also effective for controlling leafy spurge. Treat with Tordon 22K at 1 qt/acre applied about June 1 or early September. However, this application rate may not be economically feasible if a large area is infested with leafy spurge. A more cost-effective option is a tank mix of Tordon 22K at 1-2 pts/acre plus 2,4-D at 1 qt of a 4#/gal concentration/acre applied about June 1 and repeated annually. Annual applications at these rates will gradually reduce leafy spurge infestations. Control of leafy spurge seeding can be achieved with 2,4-D 1qt of a 1#/gal concentrate/acre, but will not provide control of the roots. The most aggressive approach is to apply herbicides in both the spring and fall. Whatever control measures you choose, a consistent and thorough control plan should be implemented.

Control among trees and in residential areas

Leafy spurge top growth in trees can be controlled by 2,4-D

Weed Awareness



Extent of noxious weeds in the county

Noxious weed acres in the county had been on a declining trend from 1993 to 1997. The sole reason for this decline was the result of the control efforts of both public and private landowners. However, 1998 and 1999 did not follow this trend. Moisture conditions these two years resulted in more noxious weeds germinating and made control more difficult. In the spring of 1999, the growing season started early with mild temperatures and good soil moisture. As a result, seeds dormant in the soil, as well as newly produced seeds, germinated to increase the total number of infested acres. The fall was very dry, reducing seed germination and reducing the effectiveness of herbicides. If the control efforts are not maintained, the infested acres will increase at a more rapid rate than the decline seen in previous years.

Where are the noxious weeds?

All land uses have significant infestations of noxious weeds. Approximately 12 percent of the pastureland acres are infested.

Non-ag land, which includes the City of Lincoln and rural lots, is second in the amount of noxious weed infestations. Cropland infestations are found mostly in alfalfa fields and idle cropland. The most visible infestations are on roadsides and railroads. Yet they have less than two percent of the total infested acres. There has been an aggressive control effort on these transportation corridors resulting in a sharp drop in the acres infested.

Infested acres by weed Over four percent of the land area is infested with noxious weeds. Musk thistle makes up 94 percent of the noxious weed infested area. Musk thistle has been found in almost all the sections in the county. Leafy spurge does not cover a lot of acres, but it has been found on over 400 sites and in 1 out of 7 sections. Plumeless thistle and Canada thistle infest less than 500 acres. Diffuse knapweed has only been found on one site. Follow-up inspections of this site indicate that this infestation has been eradicated.

applied at the rate of 1qt/acre of a 4#/gal concentrate. Care must be taken to avoid contacting tree foliage with either the herbicide or spray drift to prevent tree injury. Roundup applied in the spring and fall will control top

growth and reduce roots. Apply to only active growing plants, taking special care not to get any chemical on other desired plants.

Purple loosestrife a noxious weed?

The Nebraska Department of Agriculture held a public hearing December 15, 1999 on rules and regulations that would add purple loosestrife to



the state's noxious weed list beginning 2001. The director will be making a decision on this proposed addition. If the addition is made, an extensive awareness and education program is needed to inform

the public.

Threat

The Congressional Research Service portrays purple loosestrife as one of the most harmful, non-native plants in its issue paper on invasive species. They quote a source saying this one plant currently contributes \$45 million in damages annually. This damage will increase rapidly if aggressive control actions are not taken. Purple loosestrife is on the Nature Conservancy's "America's Least Wanted" list. Twenty-two states and two provinces in Canada have already designated it a noxious weed. These states include five of our neighbors.

Sterile seed issue

Purple loosestrife is naturally self-sterile and may not cross with the same cultivar. Cross-pollination is possible with other cultivars of a different flower type. Insects, including honeybees, are very effective pollinators of purple loosestrife plants even a long distance apart. Research in Minnesota and Canada found that all cultivars, including cultivars sold as sterile, will cross-pollinate and produce viable seed. This was

substantiated by seed collections made of horticultural plantings in Lincoln in 1995 and in Omaha in 1999. Seeds collected from all plants were highly viable. These seeds may or may not germinate in the flower garden, but the millions of very small seeds are readily carried by water to wetter locations more desirable for germination.

Situation in Lancaster County

Some wild purple loosestrife plants were found around some of the Salt Valley Lakes in the early 90's. The Game and Parks Commission employees have been keeping these infestations contained. Lythrum has become a very popular planting around many homes in Lincoln. Escape plants are showing up in wet and low lying areas. Some of these areas include Holmes Lake, Pine Lake, a drainage north of Van Dorn, just west of South 84 Street and a drainage crossing South 40 Street across from Williamsburg.

Why eliminate ornamen-

tal lythrum plantings?

Seed from ornamental plants are easily spread by water through storm sewers as well as other man-made and natural drainage systems. Purple loosestrife also is spread from ornamental plantings into



aquatic areas by depositing lawn and/or garden clippings along creeks, drainage or even in public landfills. The above picture shows plants spread from landscape plantings in Lincoln. Clippings from these plantings may contain viable seed and/or plant parts from purple loosestrife. Wind, birds, insects and small animals also are responsible for dispersing seed originating from ornamental loos-

strife. Purple loosestrife is a designated noxious weed in neighboring states and may soon become a noxious weed in Nebraska.

What can you do?

- If you have lythrum in your garden, please remove it.
- Dig out plants including all roots.
- Place in a dark garbage bag and take to landfill.
- DO NOT COMPOST.
- Use alternate perennials in your garden.
- Report any wild purple loosestrife plants to the Weed Control Authority.

Alternative plantings

- Ornamental purple loosestrife can be replaced with:
- Blazing star (*Liatriis* spp.),
 - Fireweed (*Epilobium angustifolium*),
 - Obedient plant (*Physostegia virginiana*), or Spike speedwell (*Veronica spicata*).
- For additional alternative plantings, contact the University of Nebraska Cooperative Extension Service at (402) 441-7180.



Weed Awareness

Find us on the web



Accessing information about the City of Lincoln departments and Lancaster County agencies is easy using their combined web page. On the Internet simply go to <http://interlinc.ci.lincoln.ne.us> and you will find the InterLinc home page. You may choose any city department or county agency. Scroll to the bottom of the page for weed control under county agencies. The following information is available along with links to related sites:

- Weed Control Authority mission and goals
 - Frequently asked questions
 - Tell us how we are doing
 - Contacting the Weed Control Authority
- Articles**
- Weed complaint form
 - What are the noxious weeds? (includes pictures and a short description)
 - Extent of noxious weeds in the county
 - What are weeds and worthless vegetation?
 - Programs
 - City of Lincoln Weed Abatement Program
 - Lancaster County Noxious Weed Control Plan
 - 2000 Annual Plan
 - City of Lincoln Combined Weed Program
 - Lancaster County Noxious Weed Control Program
 - Monthly report
 - Recommended noxious weed controls
 - Musk and plumeless thistles
 - Leafy spurge
 - Canada thistle
 - Planning tips for noxious weed control in CRP contracts
 - Preventing noxious weeds
 - Planting prairie grass & wildflowers
 - Purple loosestrife (*lythrum salicaria*)
 - Invader species – tomorrow’s weed challenges
 - Purple loosestrife is not just another pretty plant
 - Why eliminate ornamental *lythrum* plantings
 - Roadside noxious weed dissemination control
 - Test your knowledge about Nebraska weeds

Weed free forage program

When forages are transported, be it across the road or across the United States, the potential for the spread of weeds is present. A regional weed free forage program was formulated and implemented to prevent the spread of weeds from one location to another. There is a growing demand in all of North America for the use of certified weed free forage and mulch as a preventative measure to limit the spread of noxious weeds. The North American Weed Management Association developed the North American Weed Free Forage Program. These standards have been adopted by the Nebraska Department of Agriculture. The standards are designed:

1. to provide some assurance to all participants that forage certified through this program meets a minimum acceptable standard;
2. to provide continuity between the various provinces and states in the program; and
3. to limit the spread of noxious weeds through forage and mulch.

The Lancaster County Noxious Weed Control Authority

will, upon request, inspect any forage prior to harvest as to the presence or absence of the designated noxious weeds of the participating states and provinces. The forage is required to be inspected in the field of origin prior to cutting or harvesting. Forage containing any noxious weeds or other listed weeds, may be certified if prescribed treatments are followed. An inspection certificate will document that the requirements were met. Interstate shipments of forages must be accompanied by a transit certificate and/or certification marking issued by the Weed Control Authority in the state of origin. Shipments into restricted areas not accompanied by the proper transit certificate or certification marking may be rejected.

State and regional lists of available certified weed free forage are maintained and provided to potential customers. There is potential for increased value forage.

Please contact our office for assistance with the certification process or if you have questions about this program.

The truth about invasive plants

The terms “non-native,” “exotic,” “alien,” “pest plant,” “problem species” and “noxious weed” have been used for plants from other continents or distant parts of another country which disrupt native plant communities and other desirable vegetation. Most non-native plants do not become problems, but too often plants out of their natural range crowd out natives and create adverse economic impacts.

You can help control known invasive plants and avoid introducing new threats by understanding the problem:

What characteristics make invasive plants a problem?

High productivity. More seeds mean more seedlings. Purple loosestrife produces hundreds of thousands of seeds or more, per plant. By prolific seed production, they quickly establish in disturbed areas, crowd or shade out other plants, gradually spreading into less disturbed areas.

Seed dispersal. Exotics whose seeds easily get around, tend to quickly surround. *Sericea lespedeza* seeds are eaten by birds, which deposit undigested seeds everywhere on the fly.

Growth period or seasonal advantages. When sunlight and soil conditions are right for growth, exotics will grow, even if the season has shifted from their home and the local native weeds are dormant.

Lack of natural controls. Insects and plant diseases seldom travel to new habitats with their exotic host.

How do plants move from their natural range to new, distant places? Accidentally and when well-intentioned people move them. Eurasian watermilfoil seeds and plant parts traveled from Europe to the eastern U. S. coast in ship ballast, then spread to the Midwest by waterbirds and boats. Exotic modes of travel: Ship ballast/boat bilge, boat propellers, bird ingestion, floodwaters, nursery sales, contaminated fill soil and with agricultural seed.

Whose problem is it? Exotic plant control costs millions of dollars each year. Herbicides, labor and research top the bill in the fight against plants which threaten to clog waterways, ruin fisheries, turn pasture to wasteland, compete with agricultural crops, shade out forest regeneration and overrun natural areas.

How to stop exotics: Get to know the common exotic threats. Inform friends and neighbors. If you see these offered for sale, explain the problem to your nursery, grower or supplier. If you find any on your property, inform the Weed Control Authority. Support national, state and local efforts of early detection and rapid response to newly found invasive plants.

Some invasive plants to watch out for:

- Known invasive plants well established in the county**
- Musk thistle, *carduus nutans* L.*
 - Leafy spurge, *euphorbia esula**

Plumeless thistle, *carduus acanthoides**

Canada thistle, *cirsium arvense* (L.) Scop.*

Known invasive plants with increasing populations in the county

Purple loosestrife, *cythrum salicaria*

Sericea lespedeza, cespedeza cuneata

Description: A warm season, perennial herb in the pea family, or Fabaceae. It has an erect growth form, ranging from 3 to 5 1/2 feet in height and



leaves that alternate along the stem. Each leaf is divided into three smaller leaflets, 1/2 to 1 inch long, which are narrowly oblong and pointed, with awl-shaped spines. Leaflets are covered with densely flattened hairs, giving a grayish-green or silvery appearance. Mature stems are somewhat woody and fibrous with sharp, stiff, flattened bristles. Violet to purple flowers emerge either singly or in clusters of 2 to 4, from the axils of the upper and median leaves.

Ecological threat: *Sericea lespedeza*, is primarily a threat to open areas such as meadows, prairies, open woodlands, wetland borders and fields. Once it gains a foothold, it can crowd out native plants and develop an extensive seed bank in the soil, ensuring its long residence at a site. Established dense stands of *lespedeza* suppress native flora and its high tannin content makes it unpalatable to native wildlife as well as livestock.

Johnsongrass, sorghum halepense (L.) Pers.

Description: Johnsongrass is a perennial species over most of its range. Leaves are grass-like, up to one inch wide, with a prominent whitish midvein. The



ligule is short and membranous with a hairy fringe; auricles are lacking. Stems can grow up to eight feet in height, but our annual specimens will be closer to three or four feet tall. Large, open panicles are up to one foot long and emerge in midsummer. Spikelets are reddish in color and most are tipped by bent awns. Scaly, finger-thick rhizomes are produced from the crown.

Ecological threat: Johnsongrass is an invasive grass that forms dense spreading patches that completely smother other

grasses. Like all sorghums, Johnsongrass can be toxic to livestock, especially during adverse growing conditions or periods of new growth. This grass is extremely difficult to control and can become a major problem in pasture and cropping areas.

Known invasive plants with few or no plants found in the county

Spotted and Diffuse Knapweeds, centaurea sp.*

Description: Each plant produces up to 25,000 seeds that are dispersed by wind, animals and people. Seeds may remain viable for eight years. Spotted knapweed is a biennial or short-



lived perennial. Mature plants may be three feet in height and are much branched. The weed forms a basal rosette the first year and stem leaves are pinnately divided. Flower heads are abundant, 1/2 inch wide and generally solitary on branch tips. Flowers are pink to purple, or occasionally white and appear from midsummer to fall. Each stiff flower head bract has a dark comb-like fringe resembling a black spot at the tip. Seeds are dark brown to tan and are tipped by plumes that fall off at maturity.

Eurasian watermilfoil, myriophyllum spicatum L.

Description: The exotic Eurasian watermilfoil is submersed. It tolerates a wide range



of water conditions and often forms large infestations. Eurasian watermilfoil stems are reddish-brown to whitish-pink. They are branched and commonly grow to lengths of six to nine feet. The leaves are deeply divided, soft and feather-like. Leaves are about two inches long. The leaves are arranged in whorls of three to six leaves about the stem. The flowers of Eurasian watermilfoil are reddish and very small. They are held above the water on an emersed flower spike that is several inches long.

Ecological threat: Eurasian watermilfoil can form large, floating mats of vegetation on the surface of lakes, rivers and other water bodies, preventing light penetration for native aquatic plants and impeding water traffic. The plant thrives in areas that have been subjected to various kinds of natural and manmade disturbance.

*Designated noxious weeds in Nebraska