The Greater Yellowstone Coordinating Committee

A landowner's guide to

Noxious Weeds

Silent Invaders in the Greater Yellowstone Area

R1-03-108

What are noxious weeds?

Noxious weeds are non-native, invasive plants that have been brought to this country from other parts of the world. Natural controls such as insects and diseases, were not imported along with the plants, allowing these plants to grow without competition. These silent invaders are spreading like wildfire throughout the Greater Yellowstone Area.

Once noxious weeds become established they are very difficult to control, and have the ability to displace more desirable vegetation regardless of whether the area is disturbed or not. Negative effects of invasive plants in the Greater Yellowstone Area include:

- loss of native plants and wildlife habitat, which can result in reduced wildlife population
- decrease in land value and sale potential
- increased erosion resulting in diminished water quality and fish habitat
- high costs of controlling established weeds

What can I do to help?

- learn how to identify and control noxious weeds (a few useful internet sites—www.tcweed.org, www.jhwma.org, www.mtwow.org)
- inform other people about weeds and control weeds on your property
- buy and use weed free hay, gravel, and topsoil

What should I do if I have noxious weeds on my property?

To determine the best method of treatment, it is important to know which plants spread by seeds and which by deep root systems known as rhizomes. Hand pulling is an effective method for plants that spread by seeds. Dispose of pulled plants by sealing them in a plastic bag so the seeds do not escape. For plants that spread by roots, small patches can be controlled by digging up and removing all of the roots. Large patches of rhizomatous weeds have an extensive root system, making them very difficult to remove. Herbicides can be a more effective control method for large patches of weeds, regardless of how the plants spread. Treated areas, whether hand pulled or by herbicides, must be retreated on a regular basis. Dormant seeds will remain viable in the soil, germinating over a period of years. For example, spotted knapweed seeds will remain viable in the soil for more than seven years; oxeye daisy more than thirty.

What are the best chemicals to use?

The information provided in this brochure is not intended to be a complete guide to herbicides nor as a product endorsement. This brochure only lists herbicides that are reasonably affordable and not "restricted" (which require an applicator's license in order to purchase). When treating tough weeds (for example, leafy spurge or toadflax) or large patches of weeds, other herbicides that are not listed in this brochure may be more appropriate; contact a weed specialist for additional information. Most of the herbicides recommended in this brochure are based upon the Montana-Utah-Wyoming 2001-2002 Weed Management Handbook. Due to constantly changing laws and regulations, the authors assume no liability for their recommendations. ***Read and follow application directions on the labels carefully!*** Any use of a herbicide contrary to instructions on the label is not legal or recommended. Use caution when spraying near trees, most herbicides will damage ornamental trees. When using herbicides always wear protective clothing, avoid wet areas, and keep people and pets away from treated areas.

For more information, contact your county weed control manager, your state weed extension specialists, or a commercial herbicide applicator.

❑ Spotted Knapweed *Centaurea maculosa* Lam.

Origin: Europe

Reproduction: By seeds; perennial.

Concern: Can produce up to 18,000 seeds per plant per year. Infests more than 4.5 million acres in Montana.

Control suggestions: Hand pull isolated plants. Use Curtail, 2,4-D, or Redeem in early rosette stage in the spring or in the fall. Keep plants from developing seeds. Monitor for 5 to 10 years to rid the soil of remaining dormant seeds.

❑ Canada Thistle *Cirsium arvense* L.

Origin: Europe

Reproduction: By seeds and an aggressive, deep, wide-spreading root system; perennial.

Concern: Deep root system makes this plant difficult to control. One plant can colonize an area 3 to 6 feet in diameter in 1 to 2 years. Seeds are viable for up to 20 years.

Control suggestions: Apply Curtail or Clarity during actively growing rosettes to early bloom stage. Use Clarity any time during growing season.

❑ Dalmatian and Yellow Toadflax (Butter 'n' Eggs)

Linaria dalmatical, L. *& Linaria vulgaris* L.

Dalmatian toadflax

Yellow toadflax

Origin: Southeastern Europe; introduced to North America as an ornamental.

Reproduction: By seeds and rhizomes (25 inches per year); perennial.

Concern: Spreading rapidly through the ecosystem.

Control suggestions: Chemical control is only marginally effective. For Dalmatian toadflax, use Escort in late fall. For yellow toadflax, use Roundup and then re-plant area with grass seed. Use Escort or Clarity when plants are young and have few roots, but is less effective on established plants. For small patches, dig up roots. Must be monitored for 10 to 15 years.

❑ Oxeye Daisy *Chrysanthemum leucanthemum* L.

Origin: Europe.; introduced as an ornamental.

Reproduction: By seeds, creeping roots; perennial.

Concern: Quickly spreading from roadsides into meadows. Sometimes confused with Shasta Daisy (non-spreading), and transplanted as an ornamental.

Control suggestions: Hand pulling is effective for small infestations. Treat with Redeem or Escort when plant is actively growing in early spring. Seeds will remain viable in the soil for more than 30 years, so continue to monitor the site for new seedlings.

❑ Leafy Spurge *Euphorbia esula* L.

Origin: Native of southeastern Europe; escaped cultivation in northeastern U.S. in 1829.

Reproduction: By seeds and deep root system. Mature seed capsules explode projecting seeds up to 15 feet. Roots can grow 26 feet deep and can extend 15 feet per year from parent plant. Perennial.

Concern: Currently more than 3 million acres are infested. Leafy spurge produces a milky latex that is poisonous to some animals.

Control suggestions: Extremely difficult to control with herbicides and almost impossible to control by digging or pulling. Herbicides that are effective on leafy spurge are either very expensive or require an applicators license. Biological control agents, such as root–feeding weevils, have proven very effective in reducing the density of these plants. Contact your local weed specialist for additional information on developing an effective control strategy. Seeds will remain viable in the soil for more than eight years.

❑ Mayweed (Scentless) Chamomile *Anthemis arvensis* L.

Origin: Europe.

Reproduction: By seeds; an annual.

Description: Often mistaken for oxeye daisy (round basal leaves) or the pineapple chamomile (six inches tall). Mayweed chamomile has feathery leaves and grows about 12 inches tall.

Concern: Spreads rapidly. A single plant can produce up to 300,000 seeds per year.

Control suggestions: Easy to pull. Apply Curtail or 2,4-D before flowering. Dormant seeds last in soil for more than 15 years.

❑ Sulfur Cinquefoil *Potentilla recta* L.

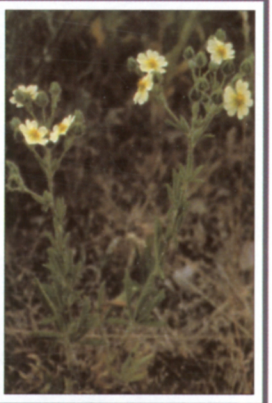
Origin: Southeastern Europe.

Reproduction: By seeds; perennial.

Description: Pale yellow flowers with long hairs on leaves (palmate) and stems. Often confused with native cinquefoils, which have deep yellow flowers or compound leaves.

Concern: Will colonize both disturbed and non-disturbed areas, forming large, continuous areas greater than 1,000 acres.

Control suggestions: Hand pull or use digging tool in small infestations. Apply Escort when actively growing.



❑ Houndstongue *Cynoglossum officinale* L.

Origin: Europe; spread to North America as a contaminate of cereal grain seeds.

Reproduction: By seeds; biennial.

Concern: Seeds can spread long distances when the matured bur-like seed clings to clothing and animals. Plant is toxic, causes liver cells to stop functioning in animals, primarily horses and cattle.

Control suggestions: Apply 2,4-D or Escort before bloom stage. Hand pull small patches or cut seed stakes before seeds mature.

❑ Orange & Meadow Hawkweed

Hieracium aurantiacum L. & *Hieracium pratense* Tausch

Orange Hawkweed

Origin: Europe; introduced as an ornamental.

Reproduction: By seeds; above ground runners; rhizomes, perennial.

Descriptions: Either orange or yellow flowers; above ground runners; hairy basal leaves and stems. Native species look similar but lack runners, and have leafy branched stems.

Concern: Can quickly spread and form dense patches.

Control suggestions: Apply Curtail, or Redeem, during rosette stage. Hand digging can be successful when working with a small patch. Root fragments left in the ground will grow new shoots.

Meadow Hawkweed

❑ Common Tansy *Tanacetum vulgare* L.

Origin: Europe; introduced as a medicinal garden herb.

Reproduction: By seeds; creeping root; perennial.

Concern: A single plant can produce up to 50,000 seeds per year. This plant contains alkaloid which reacts with enzymes in livestock and causes liver damage. Grows rapidly in pastures.

Control suggestions: Apply Escort in early spring and before flower stage. Hand pulling is effective in small patches. Root fragments left in the ground will start new shoots.

❑Dyer's Woad *Isatis tincotoria* L.

Origin: Europe; used in the 1700's as a source for blue dye.

Reproduction: By seeds; can act as a winter annual, biennial or perennial.

Concern: Spreads rapidly. Seeds attach to animals and clothing, spreading long distances.

Control suggestions: Hand pulling plants (if small). Large plants have deep roots that will break off and then re-grow. Use Escort when plants are actively growing.

❑Purple Loosestrife *Lythrum salicaria* L.

Origin: Europe, introduced as an ornamental and herb.

Reproduction: A perennial that spreads by seeds, roots, and stem fragments.

Concern: Infests over 100 million acres in the U.S., mainly in riparian areas. Can impede water flow in irrigation ditches. A single stalk can reach up to 8 feet high and produce up to 300,000 seeds per year.

Control suggestions: Hand pull or dig out. In large infestations, carefully spot spray with Rodeo or Escort.

❑Field Scabious *Knautia arvensis* .

Origin: Europe, introduced as an ornamental.

Reproduction: By seeds; a long lived perennial.

Concern: Aggressive invader, even on undisturbed sites. Produces 2,000 seeds per plant.

Control suggestions: Hand pull new or small infestations. Long tuber roots will break off and re-grow. Cut the flowers before seed set can reduce the number of new plants. Apply Escort in early growth stage before bloom.

❑Whitetop (Hoary Cress) *Cardaria draba* L. Desv.

Origin: A contamination of alfalfa seeds from southeastern Europe.

Reproduction: By seeds; and rapidly growing root systems.

Concern: Very competitive, forming dense colonies in riparian and range areas. Without competition a single plant can produce over 450 shoots per year.

Control suggestions: Apply Escort from bud to early bloom stages. Reapply in the fall if new growth appears.

Other weeds of concern:

❑**Yellow Starthistle**
Centaurea solstitialis L.

❑**Perennial Pepperweed**
Lepidium latifolium L.

❑**Bull Thistle**
Cirsium valgare Tenore

❑**Musk Thistle**
Carduus natans L.

❑**Golden Chamomile**
Anthemis tinctoria

❑**Common Mullein**
Verbascum thapsus L.

❑**Hoary Alyssum**
Berteroa icana

❑**St. Johnswort**
Hypericum perfpraturm