

## Preserving the Natural Environment of Lincoln County

*If we all work together, we can preserve the natural beauty and environment of Lincoln County.*

*Intelligently spraying herbicides in accessible areas, over-seeding with native grasses which need little moisture and care in undeveloped areas, and releasing biocontrol insects in all other areas will go a long way toward improving the quality of our environment.*

*Noxious weeds limit food, shelter and necessities needed for survival of our native wildlife.*

*Effective biocontrols and herbicides are available to totally control **Knapweed, Dalmatian Toadflax and Rush Skeletonweed.** There is no reason to have these weeds unchecked anymore.*

*Landowners should develop a strategy that best controls the three **“No-Tolerance Noxious Weeds.”***

*Help preserve Lincoln County's natural environment so that it can be enjoyed and treasured by our children and grandchildren.*



## The Lincoln County Noxious Weed Control Board will:

- Provide landowners with information and assistance to achieve high rates of weed control and voluntary compliance with state law.
- Survey and map noxious weeds countywide to identify the extent of the noxious weed problem, and to detect weeds at an earlier and more-preventive stage.
- Provide educational services to the public through publications, exhibits and presentations to schools and civic organizations.
- Conduct research on the best methods for weed control and eradication in Lincoln County.
- Be happy to have staff meet with you on your property to conduct a “weed walk” to identify problem weeds and recommend options and solutions.

**Our mission is to help you act as responsible stewards of the land and resources in Lincoln County.**



### Lincoln County Noxious Weed Control Board

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Control noxious weeds  
and help preserve  
Lincoln County's  
natural environment.



**No-  
Tolerance  
Noxious  
Weeds**

- ♦ **Knapweed**
- ♦ **Dalmatian Toadflax**
- ♦ **Rush Skeletonweed**

Lincoln County  
Noxious Weed Control Board

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**These three noxious weeds can easily be controlled by herbicides and biocontrols:**

- **Spotted & Diffuse Knapweed**
- **Dalmatian Toadflax**
- **Rush Skeletonweed**

Use an integrated approach of spraying herbicides to control these noxious weeds in accessible areas, along with cultivating and over-seeding areas of infestation.



**Spraying Spotted Knapweed can be a meticulous chore.**

Biological controls are recommended for hillsides, forested clearings and very large patches.

Don't use biocontrols for small patches, especially if the area can easily be sprayed by a herbicide.



**Releasing insects for biocontrol of knapweed**

Biological controls need three-to-five years for weed management. The impact of released insects will not be noticeable until they reach high-population densities.

**Spotted & Diffuse Knapweed**

Areas infested by Spotted and Diffuse Knapweed are quickly dominated by the noxious weed, soon reducing its grazing value and suppressing native plant communities. Knapweed reduces livestock and wildlife forage, increases surface-water runoff and soil sedimentation and lowers plant diversity.



**Spotted Knapweed can be controlled by herbicides and biocontrols.**

Diffuse and Spotted Knapweed can be managed similarly. They are readily controlled by herbicides. However, the weeds will reinvade unless cultural techniques are used. Consider spraying and then over-seeding with native grasses. Weedmaster, 2,4-D, Tordon, Cimarron Max, Transline, Curtail, Redeem and Banvel all control knapweed while preserving grass. Round-up kills knapweed, but kills grass.

**Biocontrols for Knapweed**

Larinus minutus, a seedhead weevil, is the most successful biocontrol in Lincoln County.

Larinus minutus attacks the flower seed heads of both Spotted and Diffuse Knapweeds with a slight preference for Diffuse Knapweed.



**Larinus minutus will control knapweed in three to five years.**

In 1999-2000, 2,100 Larinus minutus released near Keller Ferry in Lincoln County reduced a 50-acre infestation to five acres by 2002, and just 50 plants by 2003.



**Larinus minutus eat out the seed heads of knapweed plants.**

Another 250 Larinus minutus released in 2003 near Hume Road and S.R. 25 eliminated a 20-acre patch on the bluff overlooking Fort Spokane, leaving just 45 scattered weeds remaining.

**Dalmatian Toadflax**

Dalmatian Toadflax is an aggressive perennial that competes well with forage plants. Its leaves are thick and waxy, and this sometimes makes control with herbicides extremely difficult, but not impossible.

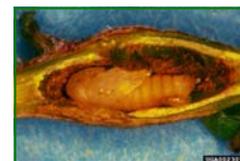


**Dalmatian Toadflax is currently common along the Spokane River in Lincoln County.**

Spray with Telar or Escort, plus an MSO surfactant, to control this weed. Not every dealer has these herbicides. Contact our office to find out where you can purchase them.

Use of an MSO surfactant is essential to penetrate the waxy skin.

Spraying Weedmaster, 2,4-D or similar herbicides will kill the main plant but not the taproot extending six-feet deep and laterally ten feet in diameter. New plants will grow from the secondary crown points along the lateral root system.



**Larvae of Mecinus janthinus inside stem.**

Biological controls are effective for inaccessible areas where spraying is too costly. Don't use biological

controls for small patches, especially if it can be sprayed with herbicide.

**Biocontrols for Dalmatian Toadflax**

Mecinus Janthinus, a stem weevil, will control a patch when there are sufficient population densities. Larvae mine the stems, and this is the major cause of damage to the plants. Mining of the stems causes premature wilting of the shoots and suppresses flower formation.

Some 500 Mecinus janthinus weevils spread about 20 feet during the first season after release; some 100 yards in the second year after release; and a half-mile in the third season, at a site north of Reardan. 5,400 Mecinus janthinus weevils were released in 2004-05 at several sites northwest of Porcupine Bay near the Spokane River.



**Rush Skeletonweed ready to go to seed.**

**Rush Skeletonweed**

Rush Skeletonweed is a long-lived perennial that spreads by seed and vegetative growth. Some 15,000 to 20,000 seeds adapted to wind dispersal are produced by a multi-stemmed plant. The roots of the plant penetrate some eight feet into the soil with branches at various depths. Buds along the lateral roots give rise to daughter rosettes, enabling a single plant to become a colony. New plants also develop from root fragments.



**Rush Skeletonweed infected by gall mites.**

All the herbicides effective for knapweed will kill Rush Skeletonweed, provided that the weed is sprayed early in the season before the rosette bolts. Once the plant has bolted, use either herbicide recommended for Dalmatian Toadflax, plus the MSO surfactant.

**Biocontrols for Rush Skeletonweed**

Three insects, a gall midge, rust and gall mite, are typically released together by dispersing infected plant parts among healthy weeds from July to September. It is cost-effective control in three-to-five years, especially with large patches.