

Continued from inside...

Plants designated as restricted, noxious and nuisance weeds are listed in the Weed Regulation. To access Alberta’s Acts and Regulations visit the Queen’s Printer at: <http://www.qp.gov.ab.ca/>

In addition, municipalities have the authority to upgrade weeds to noxious or restricted status within their jurisdiction.

Prevention will save \$\$\$\$

Use the cheapest form of weed control...prevention. Educate to prevent the introduction and spread of weeds. Weed education and awareness programs, developed co-operatively or individually by companies and government agencies are essential to implement prevention tactics.

The millions of dollars spent on weed control can be reduced through simple precautions taken up front during construction and reclamation activities.

For example, the *Canada Seeds Act* allows 5 scentless chamomile (noxious weed) seeds per 25-gram sample of Canada Certified No.1 seed. Therefore, seed designated as Canada Certified No.1, seeded at 10 lb/acre could result in 900 scentless chamomile seeds/acre. In 1978, 14 miles of seismic line were seeded with a seed mix containing scentless chamomile as an impurity. Nearly 25 years later, control efforts on the seismic line continue on all but the portion of the line seeded with a weed-free seed mix. Prevent this type of situation from reoccurring by requesting a seed analysis certificate before you buy.

Scentless Chamomile (Photo courtesy of AAFRD.)



References/Links/Resources

Books

Crop Protection (Blue Book, annual publication). Alberta Agriculture. AGDEX 606-1.

Practical Crop Protection (Green Book). Alberta Agriculture. AGDEX 606-3. 1998.

Weeds of Canada and the Northern United States – a guide for identification. France Royer and Richard Dickinson. Edmonton: University of Alberta Press; Lone Pine Publishing, 1999.

Weeds of the Prairies. Alberta Agriculture. AGDEX 640-4. 2000.

Weeds of the West, Tom D. Whitson. Newark. CA: Western Society of Weed Science in cooperation with the Western United States Land Grant Universities Cooperative Extension Services (and the University of Wyoming). 1996.

Weed Seedling Guide. Alberta Agriculture. AGDEX 640-9. 1996.

Websites

Alberta Agriculture Food and Rural Development (AAFRD) - <http://www.agric.gov.ab.ca/>

Alberta Environment - <http://www3.gov.ab.ca/env/>

Alberta Sustainable Resource Development - <http://www3.gov.ab.ca/srd/index.html>

Association of Alberta Agricultural Fieldmen - <http://aaaf.ab.ca>

Weed Awareness for Reclamation Presentation - <http://www3.gov.ab.ca/env/protenf/landrec/documents/WeedAwarenessforReclamation.pdf>

Sponsors

- Alberta Agriculture, Food, and Rural Development
- Alberta Environment
- Alberta Sustainable Resource Development
- Association of Alberta Agricultural Fieldmen
- BP Canada Energy Company
- Canadian Association of Petroleum Producers (CAPP)
- ConocoPhillips Canada

Restricted Weeds in Alberta

- Red Bartsia - *Odontites serotina Dum.;*
- Diffuse Knapweed - *Centaurea diffusa Lam.;*
- Spotted Knapweed - *Centaurea maculosa Lam.;*
- Nodding Thistle - *Carduus nutans L.;*
- Eurasian Water Milfoil - *Myriophyllum spicatum L.;*
- Dodder - *Cuscuta spp.;*
- Yellow Star-Thistle - *Centaurea solstitialis L.*

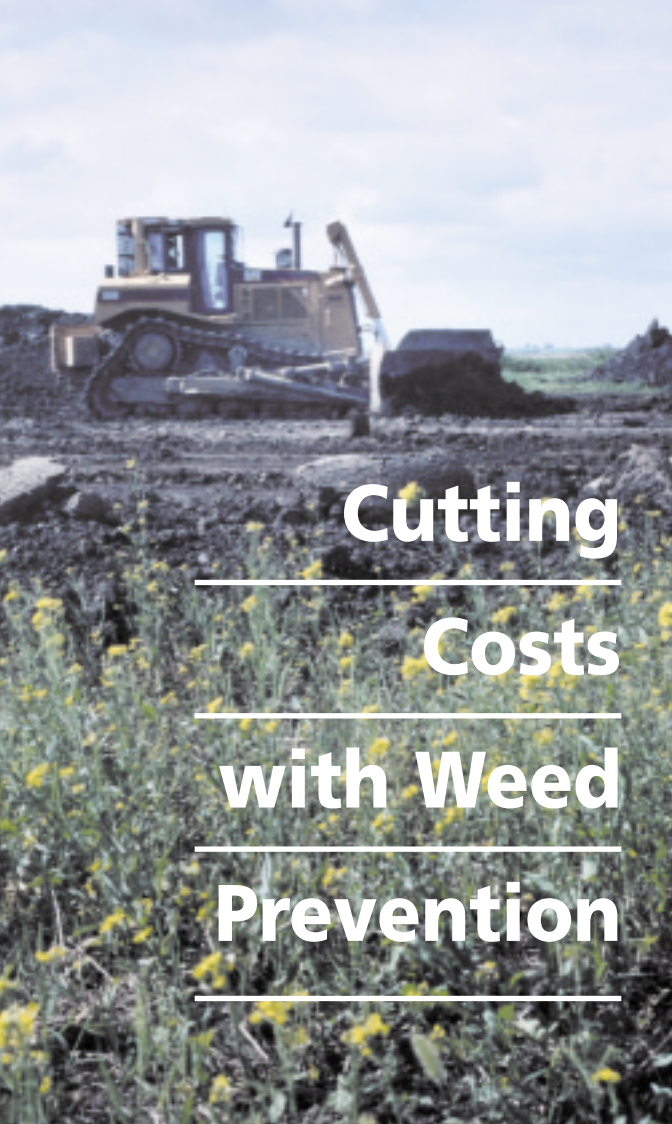
Noxious Weeds in Alberta

- Russian Knapweed - *Centaurea repens L.;*
- Field Bindweed - *Convolvulus arvensis L.;*
- White Cockle - *Lychnis alba (Mill.) E. H. L. Krause;*
- Bladder Campion - *Silene cucubalus Wibel;*
- Cleavers - *Galium aparine L. and Galium spurium L.;*
- Hoary Cress - *Cardaria spp.;*
- Knawel - *Scleranthus annuus L.;*
- Perennial Sow Thistle - *Sonchus arvensis L.;*
- Cypress Spurge - *Euphorbia cyparissias L.;*
- Leafy Spurge - *Euphorbia esula L.;*
- Stork’s Bill - *Erodium cicutarium (L.) L’Her.;*
- Canada Thistle - *Cirsium arvense (L.) Scop.;*
- Toadflax - *Linaria vulgaris Hill.;*
- Persian Darnel - *Lolium persicum Boiss. & Hohen.;*
- Scentless Chamomile - *Matricaria perforata Merat.;*
- Common Tansy - *Tanacetum vulgare L.;*
- Blueweed - *Echium vulgare L.;*
- Spreading Dogbane - *Apocynum androsaemifolium L.;*
- Field Scabious - *Knautia arvensis (L.) Duby.;*
- Hound's-Tongue - *Cynoglossum officinale L.;*
- Oxeye Daisy - *Chrysanthemum leucanthemum L.;*
- Tall Buttercup - *Ranunculus acris L.;*
- Purple Loosestrife - *Lythrum salicaria L.*

For more information contact your local Agricultural Fieldmen.

- Corridor Pipeline Ltd.
- Devon Energy
- Husky Energy Inc.
- Prairie Seeds Inc.
- Telus Communications Inc.
- Trans Mountain Pipe Line Company Ltd.
- TransCanada PipeLines Limited

Photo courtesy of TransCanada Pipelines Limited.



Cutting Costs with Weed Prevention

Prevention tactics are essential to limit the introduction and spread of weeds during land reclamation and other natural resource related operations.



Canada Thistle (Photo courtesy of AAFRD.)

Weed impacts

Weeds are characteristically non-native, adaptable, aggressive plants that have a high reproductive capacity. Their vigour, combined with a lack of natural enemies, often leads to outbreak populations that are costly to control.

These non-native invasive plants are impacting the ecosystems and multiple-use values where they invade. Weeds have the ability to out-compete native or desired species, potentially preventing successful reclamation, displacing native threatened and endangered species, delaying forest succession, and altering wildlife habitat.

Legal responsibilities

The *Weed Control Act* requires that the occupant or landowners shall as often as necessary, destroy all restricted weeds, control noxious weeds and prevent the scattering of nuisance weeds (note that operators are occupants). The Act states that no person shall deposit weed seeds or material containing weed seeds in a place where they might grow or spread. The Act also specifies that the movement of a machine or vehicle is prohibited if the movement is likely to cause the spread of a restricted, noxious or nuisance weed.

The *Public Lands Act* requires lease holders to use only seed that is free of restricted and noxious weeds within the meaning of the *Weed Control Act*, and cut, keep down and destroy all restricted and noxious weeds to which the *Weed Control Act* applies.

Continued on back...

Prevention Tactics

1 Limit Soil Disturbances

To limit the establishment of weed infestations, prevent unnecessary soil disturbances wherever possible.

2 Immediate Re-vegetation of Disturbed Sites in Danger of Becoming Infested

Limit the potential establishment of weeds on disturbed ground through timely re-vegetation with an approved species. If the area has a known weed population, it may be better to control the weeds for a season or two prior to re-vegetation.

3 Use “Weed Free” Seed for Re-vegetation of Disturbed Sites

Certified seed does not mean weed free. To ensure a seed mix does not contain undesirable weed seeds request a Certificate of Seed Analysis before purchasing. Analysis of a 25-gram sample provides a weed content analysis that is approximately 95% accurate. Refuse seed containing undesirable weed seeds.

4 Clean Equipment and Materials

Ensure that all equipment, materials and vehicles are free of weed seeds and plant parts before arriving on site. Equipment, materials and vehicles exposed to weeds should be cleaned prior to leaving an infested site.

5 Use Clean Soil and Fill

Inspect gravel pits, soil stockpiles or other fill for weeds during the growing season and prior to movement of the material. Keep soils as close to their original location as possible. Do not use soil from ditches or fence lines unless you are very sure it is free of problem weeds.

6 Use Clean Soil Amendments

Be aware that soil amendments such as straw and manure may contain large amounts of weed seeds; properly composted materials may be a better alternative. When surveying for weeds, pay special attention to areas where soil amendments have been applied.

7 Pre-activity Weed Survey

A weed survey should be completed prior to the commencement of activities to establish a benchmark for post-activity assessment. The landowner or land manager and operator should both sign the pre-site inspection, and a copy should go to the Public Lands office and/or the municipality. Sites with weeds identified on them should be noted in order to alter practices to limit the spread of weeds.

8 Early Detection and Eradication

Because a single plant and small infestations are much easier to control than large infestations, it is important to manage weeds proactively through continuous monitoring. To do this effectively, staff should be trained in the identification of restricted and noxious weeds, collection of survey information, the importance of destroying individual weed plants and reporting new infestations in a timely manner.

9 Regular Inspections and Timely Control

Inspect operational areas twice during the growing season (spring and late summer) for weeds. Ensure that inspection personnel have the authority to deal with weeds immediately. Chemical control must be conducted in a timely manner by qualified personnel. Avoid the overuse of residual herbicides on industrial facilities. These products accumulate in the soil and can prevent the growth of desirable vegetation.

10 Maintenance of Staging and Operation Areas

Remove small mounds of gravel, soil or debris and level or back-blade areas to facilitate mowing or spraying. Dispose of brush and woodpiles to eliminate weed germination sites. Grade topsoil and subsoil piles to allow access for weed control.

11 Communication

Effective communication among landowners, occupants, weed inspectors and reclamation inspectors ensures that information is shared that may prevent weed infestations and promote regional awareness. For example, information about weed history of site and weed species of concern in the area benefits all parties.

12 Incorporate Weed Management in all Operational Plans

A weed management plan should be incorporated into all operational plans to ensure effective and cost efficient management. Effective weed management plans incorporate education, survey, prevention, control and stakeholder co-operation.

Toadflax (Photo courtesy of AAFRD.)

