

## Livestock



### Grazing

When pastures and native grasslands are grazed heavily neither the desired nor the native plants can recover. These areas are very susceptible to weed invasion. While wildlife and livestock will still eat some weeds, they are poor nutritional substitutes, and some are even toxic.

### Problem

◆ **Horses require more forage than cattle** per day because their digestive system is different.

### Solution

- ◆ **Don't put more horses** in a pasture than it can support.
- ◆ **Feed hay in a dry paddock** while pastures re-grow. You will actually save money in the long run by keeping pastures in useful condition and preventing weed invasions.
- ◆ **Cross fence larger pastures** and graze them rotationally.
- ◆ **Do not spread weed-infested manure.** Contact the B.C. Ministry of Agriculture, Food & Fisheries for handling information.



Healthy native grasses

### Solution

- ◆ **Postpone turnout** if growing conditions have been poor due to weather.
- ◆ **Prevent soil disturbance** from trampling in sensitive areas during unusually wet weather or late snow melt.
- ◆ **Maintain proper distribution and utilization levels.**

### Problem

◆ **Grazing before sufficient growth** has taken place, or for too long for plants to replenish energy reserves for the next growing season, severely weakens grasses. Weeds flourish wherever trampling results in bare ground. **Healthy native plant communities are weed resistant.**

## Scary Weed Facts



- One knapweed plant produces about 1000 seeds/year that can remain viable for 8 to 20 years or more.
- A leafy spurge root system extending 0.25 m<sup>2</sup> (2.7 ft<sup>2</sup>) can, in 7 years, expand nearly 5 m<sup>2</sup> (53.8 ft<sup>2</sup>).
- Tansy ragwort is toxic to horses and cattle, causing irreversible liver damage.
- Each flowering stalk of purple loosestrife can produce 100,000 to 300,000 seeds each year.
- Gorse grows rapidly to heights of 2 m (6.5 ft) or more and grows so dense that it was once used as a 'living fence' for livestock.
- Rush skeletonweed develops a tap root extending down more than 2.5 m (8 ft).
- Hound's-tongue leaves fed in cured hay resulted in the deaths of 10 horses in the U.S.

*Understanding the life cycles of weeds helps choose the appropriate control tools.*

Annual weeds complete their entire life cycle in one year or less. *e.g. annual sowthistle*

Biennial weeds complete their life cycle in two years. In the first growing season they develop a deep root system and a low-growing rosette of leaves, then remain dormant in this stage over winter. The following spring they send up flowering stalks, produce seed, and die. Control of biennials is most effective in the first year, when the weed is in the rosette stage. *e.g. hound's-tongue*

Perennial weeds live for more than two years and most reproduce by seed. Many are able to reproduce vegetatively. Simple perennials reproduce only by seed but can re-sprout if the stems are cut. *e.g. spotted knapweed, St. John's-wort*

Creeping perennials reproduce by underground stems called 'rhizomes,' or by strawberry-like runners called 'stolons.' Plowing or tilling may help these weeds spread, making them the most difficult weeds to control. *e.g. Canada thistle, leafy spurge*

## Integrated Pest Management

...uses a combination of herbicides, mechanical and cultural methods, along with biological control.

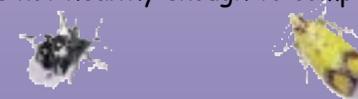
**Herbicides** are used for spot treatment of weeds in B.C. The herbicide selected depends on the target weed species and environmental factors. Contact the B.C. Ministry of Agriculture, Food & Fisheries for advice on herbicides.

**Mechanical** control physically disturbs weeds by mowing, plowing, chopping, and crushing plants. This repeatedly weakens the weeds, making them susceptible to disease, and depletes their energy reserves.

**Cultural** control includes selective grazing, irrigation and deliberate flooding, mulching, hand-pulling, and burning.

**Biological** control uses the weed's natural enemies (insects and pathogens) to reduce weed populations below a desired level. Biological control agents are thoroughly tested to ensure they will not harm native and desired introduced plants. Agents rarely kill weeds directly, but instead damage the plant's health and reduce seed production, allowing native plants an opportunity to dominate. Biological control is a long-term solution. Agents released at a weed site may take several years for their populations to build high enough to be effective. The goal of biocontrol is to establish a long-term balance between the agent and its target weed.

Weed control methods are not a substitute for good land management. Weeds will re-establish or new ones invade if soil disturbance is excessive and surrounding vegetation is not healthy enough to compete with weeds.



For more information on the biological control of weeds, visit our web site at:

<http://www.for.gov.bc.ca/hfp/noxious/introduc.htm>

or contact your local Ministry of Forests office.



**HOW THEY SPREAD AND WHAT YOU CAN DO TO STOP THEM**



# Soil Disturbance



Spotted knapweed

## Construction

Weeds are opportunists. They grow quickly on bare soil where native plants would take a while to get established.

### Problem

◆ Knapweed growing next to this pile of gravel means **the gravel will contain weed seed**, so wherever the gravel goes, so does the weed.

### Solution

◆ It is necessary to **treat weed infestations** before any fill is moved to a new area.



### Solution

- ◆ **Re-seed disturbed soils** with desirable plants as soon as possible.
- ◆ **Clean all mud and plant parts** from heavy machinery and vehicles before relocating.

## Urban Development

As new neighbourhoods are built, whole landscapes are literally turned over. Vacant lots and piles of relocated fill are prime spots for new weed infestations—non-native weeds enjoy the city too.



Dalmatian toadflax

### Solution

- ◆ **Seed bare soil** to prevent weed establishment.
- ◆ **Mow vacant real estate regularly** to prevent seed production.
- ◆ **Consider chemical treatment** of infested fill with residual herbicides to prevent re-infestation. For information contact the B.C. Ministry of Agriculture, Food & Fisheries or B.C. Ministry of Forests.



Spotted knapweed

# Recreation



Off-road and Hiking

### Problem

◆ **Operators of ATVs** need to be aware of the potential to spread weeds into remote areas.

### Solution

- ◆ **Clean all mud and plant parts from vehicles** upon leaving an area, or as soon as possible in a weed-safe location, such as a car wash.
- ◆ **Stay on established trails** to avoid excessive soil disturbance, especially during wet weather.



SUV running board

### Problem

◆ **When hiking**, many weed seeds cling readily to pets, boot laces, and especially fleece clothing.

### Solution

- ◆ **Clean all seeds and plant parts** from clothing, pets, and footwear, and mud from vehicles when leaving an area.
- ◆ **Discard seeds and plant material** in the garbage.



Marsh thistle

## Gardening

Some of the weeds we fight today arrived here as ornamentals as long as 100 years ago. Some are able to cross breed—hybridize—with native plant cousins, usually resulting in a plant that is better able to compete and reproduce in a variety of soils and climates.



Purple loosestrife

### Problem

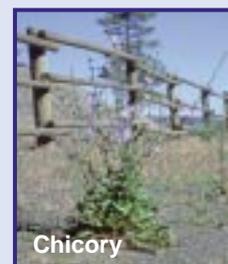
◆ **Even the most careful gardener** can't control some weedy ornamentals. Creeping rootstocks sneak under fences, birds and rodents cache or eat seeds and deposit them elsewhere, and winds carry tufted seeds long distances.



Leafy spurge

### Solution

- ◆ **Remove and discard** such plants in the landfill.
- ◆ **Do not put weeds in the compost.**
- ◆ **Remove problem plants before selling your property.**



Chicory

### Problem

◆ Some weedy ornamentals, like chicory, can be found in **wildflower mixes**.

### Solution

◆ **Check the contents** of seed mixes before buying.

### Problem

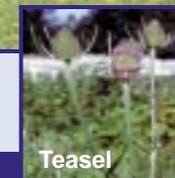
◆ **Non-native plants grown for herbal remedies** have escaped cultivation, resulting in huge infestations.

### Solution

◆ **Please don't grow non-native herbal remedy plants.**



St. John's-wort



Teasel

### Problem

◆ **Dried flower arrangements** sometimes contain weedy ornamentals like teasel, a problem escapee on public lands in the U.S.

### Solution

◆ **Learn to identify weedy ornamentals** and don't use them.

# Transportation

Weeds are spread primarily by people because people are constantly moving things.

### Problem

◆ Wind eddies created by passing traffic are ideal for aiding the **spread of wind-borne seed**.

### Solution

◆ **Mow roadside weed infestations**, ideally between bloom and seed set if possible, but definitely before seeds are produced.



Canada thistle



Yellow hawkweed

### Problem

◆ **Parts of weeds or their seeds** get stuck in vehicle undercarriages and carried long distances.

### Solution

◆ **Check the undersides** of vehicles and remove any stuck plant parts after driving over vegetated areas.



Oxeye daisy

### Problem

◆ **Some weeds have beautiful flowers**, and admirers pick them or take transplants to enjoy at home.

### Solution

◆ **Don't pick flowers if you don't know what they are.** If a weed is accidentally brought home, dispose of it in landfill-bound garbage.



Blueweed