

PESTS OF ORNAMENTAL TREES
AND SHRUBS IN THE
KAMLOOPS FOREST REGION

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INTRODUCTION

This guide has been written to assist Forest Service staff with public enquiries about ornamental pests. Although not all pests are included, those discussed are the problems most frequently of concern to property owners. A description of pest damage as well as control options are given. It is important to remember that chemical control recommendations are subject to change and require updating every one or two years.

When dealing with public requests about tree or shrub problems it is usually necessary to see the damage first hand. Sometimes it can be arranged for the individual to bring in a sample. If this is so, request a large sample that exhibits the damage. Any samples that cannot be identified should be forwarded to the Canadian Forestry Service or to the Kamloops Regional Office.

HOW TO USE THIS GUIDE

This guide is divided into categories based upon the type of damage caused by each pest. For example, those that damage terminal and lateral shoots can be found under Curled Leaders or Branch Tips.

Each category is marked by a margin index. To use, bend the guide in half and follow the margin index to the page with the black edge marker.

To aid in identification, references are given with each pest outline. The following short forms will be used for each reference book.

MIMP: the recognition and life history of the Major Insects and Mite Pests of ornamental shrubs and shade trees of British Columbia.

CTD: Common Tree Diseases of British Columbia.

KMDI: Keys to Major Disease, Insects and other related problems of Forests in Northern Idaho.

WFI: Western Forest Insects.

CFS

Factsheet: Canadian Forestry Service Factsheet, each of which has a corresponding number.

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CURLED LEADERS OR BRANCH TIPS

Damage in this category may or may not exhibit discoloration. The affected shoots may be alive or dead. They may appear to be wilted.

RED FOLIAGE

The problems discussed here are not due to or a result of insect feeding. Some red foliage occurs naturally, but it often is the result of human activity.

ABNORMAL TRUNK SYMPTOMS

Only symptoms that are exhibited on the outside of bark are discussed.

WEBBED TENT MAKERS

Includes defoliators which produce obvious web nests on branches of trees and shrubs.

GALLS OR SWELLS

These may occur on branches, needles or leaves.

SCALE INSECTS

These may occur on branches, needles or leaves.

LEAF MINERS

Insects that feed between the upper and lower surfaces of leaves.

OTHER DEFOLIATORS

MISCELLANEOUS PESTS

CURLED LEADERS
OR BRANCH TIPS

EUROPEAN PINE SHOOT MOTH

Rhyacionia buoliana (Schiffermuller)

- Host: Ponderosa and Lodgepole pines as well as ornamental pines.
- Damage: Larvae bore into and kill buds and new shoots. Affected shoots usually curl then turn brown and die. Shoots that do not die become distorted.
- Impact: Individual infested shoots are stunted. Forked tops can result when terminals are killed. Heavily infested trees develop a bushy appearance but mortality does not occur.
- Control: Infested shoots can be removed and burned. This should be done between April and early July. For chemical control see MIMP page 19.
- Reference: MIMP pp 18-19, 27
WFI page 154
KMDI page 49
CFS Factsheet No. 18

SPRUCE WEEVIL

Pissoides strobi (Peck)

Host: Spruce

Damage: Larval feeding results in the girdling of the infested shoots. They wilt, turn yellow and then brown. One years growth is affected.

Impact: Infected shoots are killed, this can result in stunted bushy trees. Trees 10-15 years old are most susceptible. Tree mortality is not common.

Control: Infested shoots can be removed and burned. For chemical control see MIMP page 47.

References: MIMP pp 32,47
KMDI page 48
WFI page 332
CFS Factsheet No. 2

FROST INJURY

Trees become frost damaged when the occurrence of frost coincides with bud flush and the development of new growth.

Host: All conifers.

Damage: New growth droops, turns red and dies. The previous years growth is not affected.

Impact: An insignificant amount of growth loss may occur but it does not cause mortality.

Control: None necessary.

References: CTD pp 14, 16

KMDI page 36

SPRUCE GALL APHIDS

Adelges spp.

- Host: Spruce
- Damage: This aphid causes the development of cone or pineapple shaped galls on the new growth of spruce branches. They are 1 to 3.5 inches long. The galls are green but turn brown later in the summer.
- Impact: These galls become very unsightly and give the tree a ragged unkept appearance but it does not cause mortality.
- Control: Galls can be removed and burned during the summer when they are still green. If the galls are brown it is too late.
If chemical control is necessary, use an insecticide that is registered for aphids. Spray in the spring before galls form.
- References: KMDI page 50
WFT pp 103-106
CFS Factsheet No. 6

RED FOLIAGE

NATURAL NEEDLE LOSS

Hosts: All conifers.

Damage: Old needles, those which are closest to the base of branches or actually grow on the bole, may turn red and die. This usually occurs in the fall. Individual coniferous needles, no matter what the species, have a life span of 1 to 5 years so this type of dieback is normal.

Red branchlets on cedar is also common in the fall. It, too, is a normal condition that occurs with hot dry summers.

Impact: Not detrimental to tree.

Control: None necessary.

Reference: CTD pp 2,3.

WINTER KILL

Winter Kill, also called winter drying, can occur if trees are exposed to warm drying winds when the ground is still frozen. The foliage loses moisture which it cannot replace through its frozen roots.

Hosts: All conifers.

Damage: Occurs in early spring before the ground thaws. Foliage turns red and dies. All foliage can be affected.

Control: None necessary.

References: CTD page 14

SALT INJURY

Deicing salts are injurious to trees and can cause damage when it comes in contact with tree roots and foliage.

Trees that grow near winter salted surfaces such as roads, driveways or sidewalks are subject to salt damage. Salt comes in contact with trees and shrubs in two ways, through melt waters or run-off and spray created by passing traffic and winds. Susceptibility to damage varies between tree species but Douglas-fir is known to be very susceptible.

The symptoms of salt injury vary. Generally speaking the affected foliage turns red and it is usually only on the side of the tree that faces the highway. The discoloration may appear on the complete height of the crown or it may only be on the lower branches.

To prevent salt damage around the home, use abrasive substances rather than salt on walkways and driveways. Salt residues are usually washed from foliage by spring rains but salt can be leached from contaminated soil with fresh water.

Leaching should be carried out as soon after the ground thaws as possible. Give the ground around the tree several lengthy applications of water so that it reaches down to the roots.

HERBICIDE INJURY

Herbicides are effective against woody as well as herbaceous plants. Tree symptoms vary according to the type of herbicide used.

The most common problem of this sort that occurs on private property results from the use of Weed and Feed. It is a product that is a combination of fertilizer and herbicide. Ponderosa pine is very sensitive to herbicides and have frequently been killed by them.

If trees are affected by soil applications it may require leaching as described under salt injury. Foliage damage as a result of drift requires no treatment, most trees recover and continue to grow the following season.

ELYTRODERMA NEEDLE CAST

Elytroderma deformans

- Host: Ponderosa pine and occasionally lodgepole pine.
- Damage: Needle infection takes place during late summer but tree symptoms do not show until the following spring. In the spring, infected needles turn red and are shed by the tree. Upon close examination, these needles will have small dark streaks on them. Witches brooms develop as a result of branch infections. These are easily recognized on Ponderosa pine as branches become compacted and bushy.
- Impact: Needle infections result in loss of needles and thinned out crowns. Witches brooms give trees an unsightly appearance but do not mean the infected will die. If 70% of the branches of a tree are infected with brooms the tree will probably die in 5 to 20 years.
- Control: There is no known chemical control for Elytroderma needle cast. Some control can be maintained if the brooms are pruned from the trees and burned.
- References: CTD page 100
KMDI page 27
CFS Factsheet No. 27

CONSTRUCTION RELATED PROBLEMS

Some trees cannot tolerate disturbances of the soil line or about their roots. All trees suffer to varying degrees but Ponderosa pine is very susceptible to mechanical disturbances. Although the tree may not react for 2-3 years, it might die suddenly.

Two very common scenerios are as follows:

1. An individual has done some landscaping and changed the grade of his yard. In the process the root collar and roots of his Ponderosa pine were buried by about 12 inches or more of soil. The tree dies of suffocation.

Prevention: The detrimental effect of fill is related to its depth. Sand and gravel fill are less severe than clay fill. Asphalt and concrete also have detrimental effects when used over tree roots.

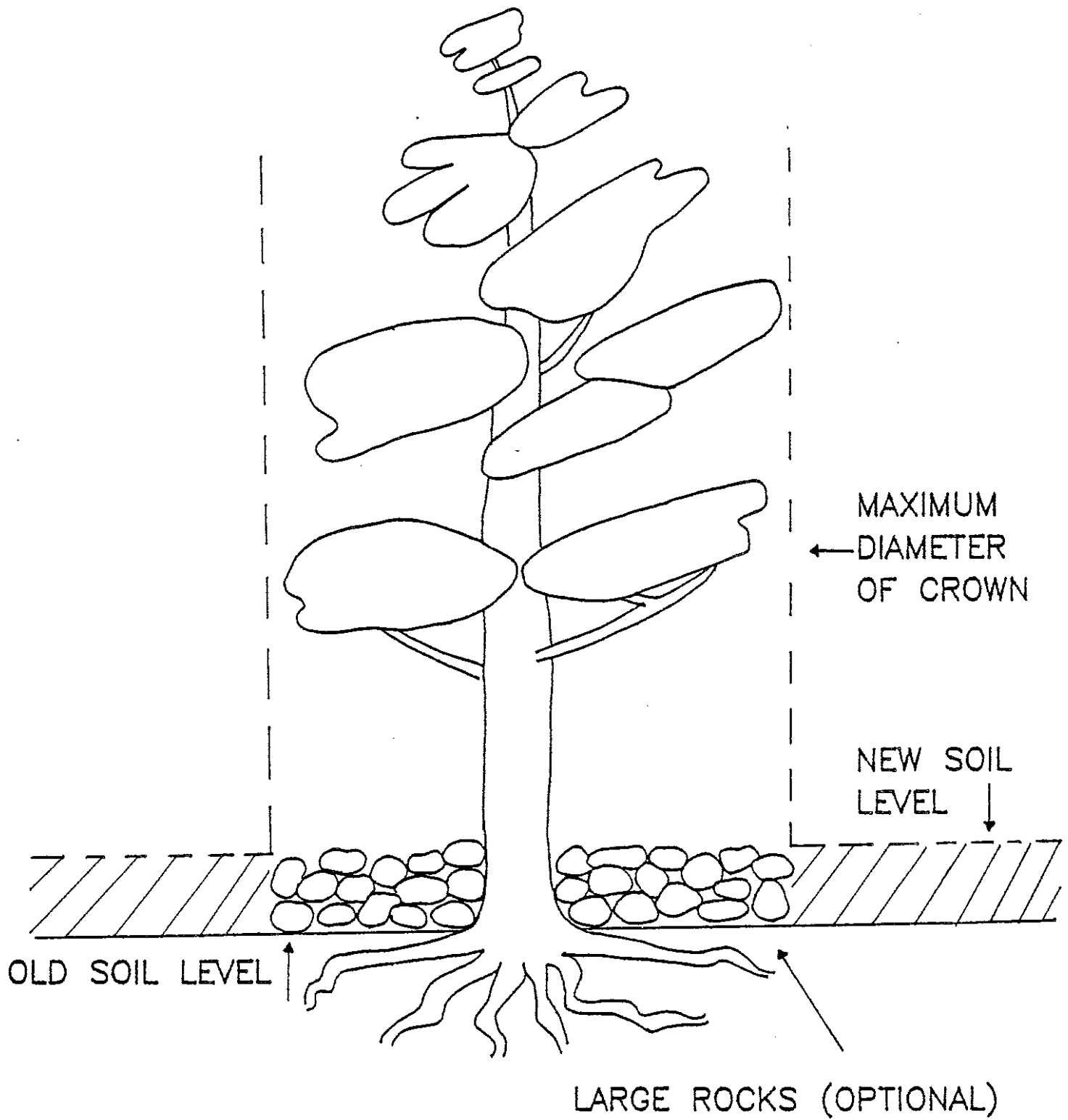
Some tree species are more tolerant of fill over their roots than others, but all species suffer some ill effects. One way in which to reduce this stress is to make a well around the trunk of the tree. It should be deep enough that it goes down to the original soil line. Tree roots usually extend as far outward as the tree crown, therefore, if the well is to be successful it must have a diameter equal to that of the crown. The chances of saving a filled tree are proportional to the size of the well placed around it. This well can be left open or can be filled with large stones which allows air movement. See figure one.

Fill injury is difficult to treat because trees are usually exhibiting severe stress symptoms when diagnosed. If this is the case and the amount of fill covering the complete root system is more than 12 inches, the tree should be removed.

2. In this case the soil grade has been lowered. A new drive way has been built which involved removing soil, and as a result the roots of a close by tree were disturbed or severed.

Prevention: This type of tree damage can only be prevented by proper planning before construction. The severity of the damage depends upon how much soil was removed. Cutting of large roots that are close to the trunk will have a more damaging effect than cutting smaller ones. Treatment is difficult once the tree shows signs of severe stress such as small needles, twig dieback and thin crowns.

FIGURE ONE
ROOT WELL



ABNORMAL TRUNK SYMPTOMS

SEQUOIA PITCH MOTH,

Vespamima sequoiae(Hy.Edwards)

- Hosts: Ponderosa and lodgepole pines. Douglas-fir is sometimes attacked.
- Damage: The female moth lays single eggs in bark wounds and at the junctions of branches and bole. The larva feeds upon the cambium which cause a mass of pitch to form. This pitch mass is quite large, about 2 inches in diameter. For positive identification carefully remove the pitch from the bole and you should find a large white larva.
- Impact: This insect is common on ornamental pines and usually occurs in small numbers. The individual larvae are not heavy feeders but numerous attacks can damage small trees. Large mature trees suffer very little damage.
- Control: Individual pitch masses and larvae can be removed by hand. These wounds should then be covered with wound paint. Another alternative is to squash the larva between the pitch and tree with a hammer. Do not remove the pitch so that it can protect the tree from infection.

Chemical sprays do not penetrate pitch masses.

References: WFI page 139

CFS Factsheet No. 69

BARK BEETLES

Dendroctonus spp.

- Hosts:** Lodgepole and Ponderosa pines, Douglas-fir and Spruce. Usually, mature trees with a diameter of more than 8 inches are attacked. These trees may already be in a weakened state.
- Damage:** Female beetles produce galleries and lay their eggs under the bark of attacked trees. The presence of pitch tubes/ or boring dust are main symptoms of attack. The foliage of infested pines and firs will turn red one year after attack. Remove bark from the tree bole to check for the presence of galleries.
- Impact:** Bark beetle attacked trees almost always die. If a tree is not heavily infested it may recover.
- Prevention:** Healthy trees are more resistant to bark beetle attack than trees with declining growth. Trees can be watered to encourage growth. Avoid disturbing the root system and take care not to cause mechanical wounds. If chemical protection is necessary sevin can be used. The bark surface must be sprayed to the drip point and to a diameter limit of 6 to 8 inches.
- Control:** No chemical controls are available for these pests. Infested trees should be felled and burned. In order to destroy the insects, the bark must be thoroughly burned.
- References:** MIMP Page 10
KMDI pp 63-67
CFS Factsheet No. 13 and 14

SAPSUCKER DAMAGE

Caused by Red-breasted Sapsucker

- Hosts: Various coniferous and deciduous trees, particularly Douglas-fir and White birch.
- Damage: This bird pecks numerous rows of holes in tree bark. These holes are sometimes found around the whole circumference of the tree.
- Impact: If the wounds are numerous, cankers and some bark mortality may occur. Trees are sometimes girdled. In most cases damage is not severe enough to cause mortality.
- Control: None
- References: CTD pp 14,15

WEBBED TENT MAKERS

FALL WEBWORM

Hyphantia cunea (Drury)

- Hosts: Numerous deciduous trees including fruit trees. It does not feed on conifers.
- Larvae: Two color forms exist. One has a black head and yellowish-green body, the other which has a red head has a yellow-orange and brown body. Both phases are densely covered with hair.
- Damage: The larva make large webbed nests in the tips of branches and may defoliate entire trees when populations are high. These nests are commonly seen along roadsides throughout the summer.
- Impact: Complete defoliation weakens trees. Several successive defoliations can cause mortality, but it tends to be a nuisance more than anything else.
- Control: Nests containing larvae can be removed and burned. For chemical control see MIMP page 20.
- References: MIMP Page 20
WFI Page 219
CFS Factsheet No. 11

UGLYNEST CATERPILLAR

Archips cerasivoranus (Fitch)

- Hosts: Various deciduous trees, but prefers cherry.
- Larvae: They have black heads and yellow-green bodies. They have very few hairs on the body.
- Damage: This defoliator makes large webbed nests which tie branches together. These nests tend to be rather unsightly because they are cluttered with excrement and bits of leaves, hence the name uglynest.
- Impact: Even though they can cause complete defoliation of shrubs, they have little impact. They can cause weakening but not mortality.
- Control: Nests containing larvae can be removed and burned. Chemical control is the same as for Fall Webworm.
- References: WFI page 165

WESTERN TENT CATERPILLAR

Malacosoma californicum pluviale

- Hosts: Various deciduous trees including fruit trees.
- Larvae: Mature larvae vary in color. Their heads are blue to black and their bodies are marked with black, orange and blue markings. They frequently have a broken bluish-white line down the back. They are quite hairy.
- Damage: Feeds upon the foliage causing defoliation. Web tents are produced in the branches.
- Impact: Single complete defoliation weakens the affected tree. Repeated defoliations can cause mortality.
- Control: Nests containing larvae can be removed and burned. For chemical control refer to MIMP page 53.
- References: WFI page 188
MIMP page 53
CFS Factsheet No. 4

GALLS AND SWELLINGS ON
BRANCHES, NEEDLES AND
LEAVES

WESTERN GALL RUST

Endocronartium harknessii

- Hosts: Two and three needle pines.
- Damage: Round globose galls develop on branches and occasionally on the bole. Foliage frequently turns yellow beyond the gall. In the spring, these galls are covered with orange powdery masses of spores.
- Impact: Branches can be stunted or killed if infected. Topkill sometimes results when terminals develop galls. Saplings are susceptible to wind damage when galls form on the main stem.
Aside from its affect on branches, mature trees are not killed but, numerous galls give the tree an unsightly appearance.
- Control: Remove and dispose of galls before they develop spores in the spring as these spores are the source of infection. There is no chemical control.
- References: CTD page 37
KMDI page 51

SPRUCE GALL APHIDS

Adelges spp.

- Hosts: Spruce
- Damage: Pineapple or cone shaped galls develop on the new growth. They may occur at the tips or along the full length of the new growth. The galls are green and then turn brown late in the summer.
- Impact: These galls are very unsightly and when they develop in large numbers give spruce trees a ragged appearance. This pest does not cause mortality.
- Control: Galls can be removed and burned in mid summer. For chemical control refer to MIMP page 14.
- References: MIMP page 14
KMDI page 50
WFI pp 102-106
CFS Factsheet No. 6

DOUGLAS FIR NEEDLE MIDGE

Contarinia spp.

Host: Douglas-fir

Damage: Small swellings or galls develop on the new needles.
Tiny yellow-orange larvae can be found inside these galls.
Affected needles often exhibit a slight crook.

Impact: Needles turn yellow and drop from the tree. A lot of foliage
can be lost if infestations are high. Twig mortality can
occur but not in significant amounts.

Control: None required.

References: KMDI page 21

WFI pp 417-219

GALL MITES

Eriophyes spp. and Vasates spp.

Hosts: A wide variety of deciduous trees are attacked.

Damage: Mites feed on leaves, buds and twigs causing tiny galls of various shapes. They also cause dense hairy felt-like patches which range in color from red to yellow.

Impact: None

Control: Not usually necessary but if so refer to MIMP page 37.

References: WFI page 57
MIMP page 37

SCALE INSECTS

SCALE INSECTS

Lepidosaphes spp., Phenacaspis spp. and others

Hosts: Various deciduous and coniferous trees.

Insect: There are numerous types of scale insects all of which vary in appearance. They are sedentary insects which develop a waxy or shell-like cover over their bodies, hence the name, scale-insects. They are generally a few millimeters in length and occur singly or in groups. They are easily scraped from the plant surface with your finger nail.

Damage: Scales are sap-sucking insects. They may cause some foliage discoloration if populations are high.

Impact: Little or no impact.

Control: Seldom necessary, but if so, refer to MIMP pp 40,41

References: WFI pp III-124
MIMP pp 40-41
KMDI page 19
CFS Factsheet No. 40

LEAF MINERS

ASPEN LEAF MINERS

Lithocolletis tremuloidiella (Braun) and
Phyllocnistis populiella (Chambers)

Hosts: Aspen and cottonwood.

Damage: Larvae feed between the upper and lower surfaces of the leaf causing portions to turn brown. Two basic types of mines produced are lineal or maze-like and blotch mines. Larvae may feed singly or in groups and are usually found in foliage that is less than 50 ft. high.

Impact: Larval feeding can result in premature leaf drop. Aside from its unsightliness, damage is usually minimal.

Control: Chemical control is not usually necessary, but if so, refer to MIMP page 8.

References: WFI pp 135-36

MIMP page 8

BIRCH LEAF MINERS

Fenusa pusilla (Lepeletier)

- Hosts: Native and ornamental birches.
- Damage: Larvae feed between the upper and lower surfaces of the leaf. This feeding results in browned blotches. Larvae may feed singly or in groups.
- Impact: Premature leaf drop may occur and some weakening of affected trees. Mortality does not usually occur.
- Control: Unless populations are very high, control is not necessary. For chemical controls refer to MIMP page 11.
- References: MIMP page 11.

OTHER DEFOLIATORS

FOREST TENT CATERPILLAR

Malacosoma disstria (Hübner)

- Hosts: Numerous deciduous trees including fruit trees.
- Larvae: The body is black with blue strips along the sides, and white key-hole shaped spots on the back. The head is bluish-black. The body is covered with numerous hairs.
- Damage: This pest feeds upon the foliage and can cause complete defoliation when populations are high.
- Impact: Repeated heavy defoliation can cause growth loss and branch kill.
- Control: Egg bands can be removed and destroyed during the winter see WFI page 190. For chemical control see MIMP page 20.
- References: WFI page 190
MIMP page 20

DOUGLAS FIR TUSSOCK MOTH

Orgyia pseudotsugata (McDunnough)

- Hosts:** Primarily Douglas-fir but, it does feed upon Ponderosa pine, Spruce and Larch when growing in conjunction with Douglas-fir.
- Larvae:** Immature larvae are black and have very long body hairs. The mature larvae are hairy with two black pencil tufts pointing forward from behind the head and another pointing backward from the end of the abdomen. Along the back there are four thick, short, white to light brown tufts. The head is black.
- Damage:** Larvae begin feeding shortly after bud flush. After feeding on the new foliage they then move to the older needles. The partially eaten needles discolor giving the tree crown a characteristic red tinge. Another distinctive trait of tussock moth defoliation is that they defoliate the upper 1/3 of the crown first.
- Impact:** If a tree is severely defoliated for two successive years, mortality can occur. Defoliated trees become susceptible to other pests and may suffer from top kill.
- Prevention:** It is relatively impossible to protect trees during spring dispersal because the immature larvae spin silken threads and are carried to other trees by the wind. During July and August mature larvae migrate or crawl from their feeding sites to pupation sites. Larvae can be deterred from crawling up the tree by applying a 5 inch band of heavy grease around the tree trunk. The band can be placed about two feet above the ground. It is important that the band not have any gaps over which the larvae can crawl and the grease must be reapplied before it dries. Using the grease band will not eliminate a tussock moth problem on a tree. Any larvae that congregate on the tree trunk can then be killed. If pupae develop, they too should be killed. Squashing would be most effective.
- Control:** Where possible, egg masses can be removed and destroyed from September through May. Control on large trees is difficult. If chemical control is necessary an insecticide should be applied 5 to 10 days after 80% dispersal. Dispersal is defined as being the point in time when the majority of immature larvae crawl away from or leave the egg mass. The following monitoring system can be used to determine the time at which trees should be sprayed.

DOUGLAS FIR TUSSOCK MOTH (Continued)

Monitoring: In early April choose about half of the infested trees as sample trees. These trees should have low branches so that they can be easily inspected. If this is a problem, choose trees within a 100-150 m radius of the trees you intend to spray. Tag ten egg mass per tree.

Beginning about mid-April, each egg mass should be checked twice a week. Watch to see if any larvae are hatching. When hatching does begin the trees should be checked every other day. Now that the eggs have begun hatching, start to watch for dispersal. Trees should be checked everyday once dispersal begins. It is important, at this point, to take notes as to exactly which eggmasses have dispersed. Remember, dispersal is the time at which the majority of larvae leave the eggmass.

Insecticides should be applied 5 to 10 days after your records show that larvae have dispersed from 80% of the egg masses. Orthene and Sevin are most effective against Douglas-Fir Tussock Moth.

Because of varying climatic conditions, the timing of the tussock moth's life stages; ie hatch, dispersal, migration and pupation, will vary between locations. For further information call the Regional Office.

WEB-SPINNING SAWFLIES

Acantholyda sp. (Middlekauff)

- Hosts: Various coniferous trees, frequently seen on ornamental Blue Spruce.
- Larvae: The following characteristics are common of any species belonging to this group of sawflies. They have long segmented antennae as well as a pair of 3 segmented appendages projecting from the end of the abdomen. These larvae have only 3 pairs of legs and they occur in the thoracic segments (the first 3 segments behind the head).
- Damage: Some species of Acantholyda are gregarious feeders and others are solitary.
The following comments refer to the gregarious species. After hatching, the larvae build shelters of silk, discarded needles and excrement in the forks of twigs and branches.
From these shelters the larvae feed upon the old foliage.
- Impact: Mortality is an unlikely result of defoliation from this pest. If there are several nests per tree then a shabby appearance may develop.
- Control: Larvae can be removed by hand and destroyed. If chemical control is necessary, use a contact insecticide and be sure to use sufficient force to penetrate the nests.
- References: WFI page 434

WESTERN FALSE HEMLOCK LOOPER

Nepytia freemani (Munroe)

- Hosts: Usually Douglas-fir but occasionally found on Western hemlock, Engelmann spruce, Alpine fir and Ponderosa pine.
- Larvae: The mature larvae are about 30 mm long. The head is light brown with a few black dots. The body is reddish-brown with white and yellow stripes along the sides.
- Damage: These larvae are wasteful feeders who begin feeding in the upper crown and work their way down as the season progresses. Defoliation begins with the new growth and then they move to the older needles. Affected trees discolor, resulting in a reddish tinge.
This pest often occurs with Douglas-Fir Tussock Moth.
- Impact: N. freemani does not usually cause mortality although it can occur if a tree suffers repeated severe defoliations. Topkill, forked tops and other deformities can result.
- Control: If necessary, use a contact insecticide.
- References: WFI page 211
CFS Factsheet No. 59

WESTERN SPRUCE BUDWORM

Choristoneura occidentalis (Freeman)

- Hosts: Douglas fir, but frequently found on ornamental Spruce.
- Larvae: Mature larvae are 25 to 32 mm long. The head is dark brown to black with a light to dark brown body. The best identification feature is the presence of four whitish spots on the back of each segment.
- Life Cycle: Eggs are laid in late July - early August and hatch in 9-12 days. The newly hatched larvae do not feed, they spin an overwintering shelter under bud scales or on the bark.
- When the larvae emerge in the spring they mine the old needles and buds. After the buds have flushed they begin feeding on the new growth. They will also feed upon the older foliage.
- From late June to mid-July the larvae pupate at their feeding sites. The adults emerge early July to late August.
- Damage: Spruce budworm is a wasteful feeder. Defoliation is most noticeable in the upper crown and on the new growth. Webbing can frequently be seen at these feeding sites. Reddish discoloration also occurs. Unlike Douglas-fir Tussock Moth, C. occidentalis ties the newly grown shoots together with silk to form a shelter. Larvae can be found within these shelters.
- Impact: Moderate defoliation results in growth reduction. Heavy repeated defoliation can result in tree mortality. Tree deformity and top killing can also occur.
- Control: On smaller trees, larvae and pupae can be removed and destroyed.
For chemical control refer to MIMP page 52.
- References: MIMP pg 52
WFI pg 168
KMDI pg 46
CFS Factsheet No. 31

MISCELLANEOUS PESTS

BOXELDER or MAPLE BUG
Loptocoris trivittatus (Say)

Hosts: Manitoba Maple, female tree only.

Damage: Feeding damage on the host tree is seldom noticed. These bugs become a nuisance in the fall when they are searching for a dry place to overwinter. They can be found crawling about houses, yards, garages etc.

Impact: Strictly a nuisance.

Control: Do not plant Manitoba maples near dwellings. For chemical control refer to MIMP page 12.

References: WFI page 83
MIMP page 12
CFS Factsheet No. 10

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PROBLEM FINDING QUESTIONNAIRE
FOR EXTENSION CALLS

NAME: _____

DATE: _____

ADDRESS: _____

1. Tree species: _____ Age (approx.) _____ Height (approx.) _____

2. How many trees are affected? _____

3. Do they grow together? _____

4. When was the problem first noticed? _____

5. What part of the tree is affected?

Trunk _____ Go to Section One.

Leaves or needles _____ Go to Section Two.

Branches _____ Go to Section Three.

6. Can a sample be brought into the office? _____

SECTION ONE

TRUNK

1. What exactly is abnormal about the trunk? _____

2. Are there several rows of squarish holes in the bark? _____

3. (i) Are there white or reddish gummy masses (pitch tubes) on the bark? _____

(ii) How numerous are they? _____

(iii) Are they smaller than one inch in diameter _____ or greater? _____

4. Are there any mechanical wounds present ie: lawnmower damage? _____

5. Is the tree foliage affected? _____

REFER TO: ABNORMAL TRUNK SYMPTOMS IN ORNAMENTAL PESTS GUIDE

SECTION TWO

LEAVES OR NEEDLES

1. What exactly is abnormal about the foliage? _____
 - A. Foliage reddish or yellowing? See part A below
 - B. Complete needles/leaves or parts of, have been eaten (defoliated)? See part B below.
 - C. Small swellings or galls present. See part C below.

PART A

1. Are only the needles closest to the tree trunk turning red? (possibly natural needle loss) _____
2. (i) Does the tree grow near a road or driveway? _____
(ii) Is salt used on these surfaces? _____
3. (i) Do paved surfaces occur on more than one side of the tree? _____
(ii) If so, how many? _____
4. (i) Has any landscaping been done around the tree in the last five years? _____

(ii) Was the grade changed? _____
(iii) Ground raised or lowered around tree? _____
5. (i) Have herbicides such as Weed n' Feed been used on the lawn? _____
(ii) If so, when? _____
(iii) Near the trees? _____
6. Are there any mechanical wounds present? _____
7. Are there any white or reddish gummy masses (pitch tubes) on the tree trunk? _____

REFER TO: RED FOLIAGE IN ORNAMENTAL PESTS GUIDE

PART B

- 1 (i) Is any one part of the tree defoliated? _____
- (ii) Which part? Upper portion _____ Branch tips _____
- Single branch _____ Scattered randomly _____
- Complete tree _____
2. (i) Have any insects been seen? _____
- (ii) Describe them. Caterpillars _____ Beetles _____
- Hairy _____ Color (s) _____
- Other _____
3. Do they feed in groups? _____
4. Do they make webbed tents? _____

REFER TO: WEBBED TENT MAKERS, LEAF MINERS AND OTHER DEFOLIATORS IN ORNAMENTAL PESTS GUIDE

PART C

1. Where do the swellings or bumps (galls) occur?
- Leaf surface, upper _____ lower _____ both _____
- Leaf stem _____
2. Are these bumps composed of plant tissue? _____
3. Are there any tiny white cottony masses on the foliage? _____
4. (i) Are there any tiny hardened more or less flat substances on the foliage?
- _____
- (ii) Can they be removed with your finger nail? _____
- (iii) What color? Whitish _____ Dark _____
5. (i) Do these swellings occur at the tips of branches? _____
- (ii) Are they cone or pineapple-shaped with stunted needles? _____
- (iii) What color are they? Green _____ Brown _____
- (iv) How numerous? lightly scattered _____
- heavy (almost all branch tips) _____

REFER TO: GALLS OR SWELLS in ORNAMENTAL PESTS GUIDE

SECTION THREE

BRANCHES

1. What exactly is abnormal about the trees branches?

- A. Large swellings _____ See part A
- B. Stunted bushy clumps of branches _____ See part B
- C. New growth swollen _____ See part C
- D. Terminal shoot curled over _____ See part D

PART A

- 1. Are these swellings woody? Do they have bark on them? _____
- 2. Are they more or less round? _____
- 3. Are they about one inch in diameter? _____
Larger? _____ Smaller? _____
- 4. Have you ever noticed orange powder on them? (in Spring only).

REFER TO: GALLS AND SWELLS IN ORNAMENTAL PESTS GUIDE

PART B

- 1. Are there any discolored needles within these clumps of branches (brooms)?

- 2. Does this discoloration also occur on foliage unassociated with these clumps of branches.

- 3. Are the older needles discolored? _____

REFER TO: RED FOLIAGE IN ORNAMENTAL PESTS GUIDE

PART C

1. Do they occur at the tips of branches? _____
2. Are the swellings cone or pineapple shaped with stunted needles? _____
3. How long are they ? _____
4. What color are they? Green _____ Brown _____
 Other _____
5. How numerous are they? Lightly scattered _____
 heavy (almosted all branch tips) _____

REFER TO: GALLS OR SWELLS IN ORNAMENTAL PESTS GUIDE

PART D

1. Is only the terminal leader affected? _____
2. If not, what other shoots _____
3. Do the affected shoots appear to be wilted? _____
4. Are they green or brown? _____

REFER TO: CURLED LEADERS OR BRANCH TIPS IN ORNAMENTAL PESTS GUIDE