

PEST MANAGEMENT  
THRESHOLD INDICATORS

**CITY OF REGINA**  
**Pest Management Threshold Indicators**

The following table shows the threshold indicators for insect pests and tree diseases. When these threshold indicators are exceeded corrective action is required. The action may involve 1) pruning; 2) tree removal; 3) non-chemical control measures; or 4) chemical spraying. The determination as to which corrective action is appropriate depends upon the following factors: 1) the type of disease or insect involved; 2) the number of trees affected; 3) the species of the trees affected; 4) the age of the trees affected and their general health; and 5) the specific location and area of the city involved. It is important to recognize that the threshold indicators described in Table 1 are based on Integrated Pest Management's experience with insect pests and tree diseases to date. The threshold indicators, however, are not static and should be reviewed regularly and revised as additional information becomes available.

The following table shows the threshold indicators for insect pests and tree diseases.

Table 1: Pest Management Threshold Indicators

**INSECTS**

<b>Pest(s) to be Monitored</b>	<b>Species for Monitoring</b>	<b>Monitoring Method</b>	<b>Time of Year</b>	<b>Counting Method</b>	<b>Threshold Indicators</b>
Elm Bark Beetle	Ulmus	Pheromone Traps	S/Sm/F	#/trap/sector	DED Presence
Cankerworms	Acer, Betula, Cotoneaster, Fraxinus, Malus, Populus, Prunus, Tilia Ulmus	Visual	S/F	#Adult Moths/Band #/Leaf	Avg. 250 Adults - per band - per sector - 5 per leaf
Aphids	Various Deciduous	Visual	S/Sm/F	#/Leaf	> 25/Leaf on 10 Leaf Avg. (include 1 clutch)
Borer	Various	Visual & Pheromone Traps	S/Sm	Dead/Branch Exit/Holes	5/25 sq. cm./wound Avg. of 5/trap/sector
Western Ash Bark Beetle	Fraxinus -Green -Black -Patmore	Visual	S/Sm/F	# Basal Exit Holes/Dead Branch	>25% of tree affected or 5/7 sq.cm.
Plant Bugs	Acer Fraxinus	Visual	Sm/F	#/Leaf % of tree affected	>20% of tree affected
Pear Slugs	Cotoneaster	Visual	Sm/F	# of slugs	>25% of tree

				/leaf Visual	affected
Leaf Rollers	All	Visual & Pheromone	S/Sm	#/Pheromone trap Visual	# of adults per trap # of rolled leaves >25%
Tent Caterpillar	Deciduous	Tree Banding Visual	S/Sm	Tent egg mass or #/Tree	Feeding Damage to 25% of leaves
Sawfly	Spruce, Pine	Visual	Sm	#/Branch	10/Branch on 5 Branches
Spruce Budworm	Picea	Visual	S/Sm	# larvae per branch % damage per branch	>5 branch >10%
Spider Mite	Spruce, Pine	Visual	S/Sm/F	#/Area	10/13 sq. cm. or 10% of tree
Hard Body Scales	Var. Species	Visual	Sm/F	#/sq.cm.	5/7 sq.cm. 10 branch avg.
Soft Body Scales	Var. Species	Visual	Sm/F	#/sq. cm.	5/7 sq.cm. 10 branch avg.
Leafminers	Var. Species	Visual	Sm	% of tree affected	10% leaves affected
Bronze Birch Borer	Betula	Visual	Sm/F	# exit holes/tree larvae galleries % dieback in tree	>5/tree >5/tree >10%
Flower Gall Mite	Poplar, Ash	Visual	Sm/F	Presence	10 Branches affected
Leaf Beetles	Var. Species	Pheromone Paper Traps	S/Sm/F	#/sq. cm.	5/7 sq.cm. (10 count avg.)
Web Worm	Various	Visual	Sm	#/tree	>25% of tree affected

### Disease

<b>Pest(s) to be Monitored</b>	<b>Species for Monitoring</b>	<b>Monitoring Method</b>	<b>Time of Year</b>	<b>Counting Method</b>	<b>Threshold Indicators</b>
D.E.D.	Ulmus	Visual & Lab Analysis	S/Sm/F	Flagging/Wilting	Presence of D.E.D. Fungus
Dothiorella	Ulmus	Visual & Lab Analysis	S/Sm/F	Flagging/Wilting	20 % die back & positive lab result
Verticillium	Ulmus	Visual & Lab Lab Analysis	S/Sm/F	Flagging/Wilting	20 % die back & positive lab result
Fireblight	Cotoneaster	Visual & Lab	S/Sm/F	Presence	Any infection

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	Malus Prunus Sorbus	Analysis			
Environmental	All	Visual & Lab Analysis	W/S/Sm/ F	% of Tree Affected	>25%
Blackknot	All Prunus	Visual	S/Sm/F/ W	# of knots on Tree	1 or more per tree once in main trunk cannot be managed
Bacterial Wetwood	Ulmus	Visual	S/Sm/F	Presence	Area affected > 26 sq. cm.
Anthrachnose	Fraxinus, Platanus, Cornus/ Quercus/ Acer	Visual	S/Sm	Lesions/Leaf	5 per leaf
Chlorosis	All	Visual	Sm/F	% Tree Affected	> 20%
Leaf Spots	All	Visual & Microscopic	S/Sm	% coverage # spots/5 leaves	50% of tree 5 per leaf
Phytophthora (cinnamoni)	Var. Species	Visual	S/Sm	% of leaf loss	1 canker on main stem
Scab	Crabapples, Pears, and Cherry	Visual	S/Sm	Lesions/Leaf	5/Leaf or On Petiole