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PEST REPORT

Pacific Forestry Centre • 506 West Burnside Rd. • Victoria, B.C. • V8Z 1M5

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Forest Tent Caterpillar in British Columbia in 1986

and

Forecasts for 1987

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FOREST INSECT AND DISEASE SURVEY

The forest tent caterpillar, Malacosoma disstria, defoliated more than 93 000 ha of deciduous trees in two regions in B.C. in 1986. This is almost double the 1985 area and occurs primarily in the Prince George Region but also in the Nelson Region. Mostly trembling aspen and also black cottonwood, white birch, willow, fruit trees and roadside shrubs were attacked.

The major areas occurred in the Prince George Region where over 92 000 ha in 169 infestations were lightly to severely defoliated, up from 57 000 ha in 1985. This is the fourth consecutive year of defoliation in the Taylor-Fort St. John area and the third consecutive year in areas south of Dawson Creek. Defoliation was again concentrated along rivers, creeks and shelterbelts, particularly along the Kiskatinaw River, from Tupper north to the Peace River and along the Peace from the Alberta border to just east of Fort St. John, with large patches of severe defoliation in adjacent areas. Extensive new areas of defoliation were seen on the east side of the Pine River from Fort St. John south as far as Favels Creek. An additional 580 ha of primarily light defoliation occurred in six small patches in the Salmon River Valley just north of Prince George; high larval populations but no defoliation was noted around Tabor Lake.

In the Nelson Region approximately 1 200 ha in 37 infestations were defoliated; a tenfold expansion from 125 ha of defoliation in 1985. Defoliation occurred in the Trail-Warfield area for the third consecutive year and this year has expanded west to Rossland, east through Trail almost to Montrose, southeast to Casino and north as far as China Creek near Castlegar, with a 100 ha patch at Crawford Creek on the east side of Kootenay Lake. Other isolated minor infestations (.1 to 20 ha) were noted at Castlegar, Crescent Valley, Eholt and Goat River west of Kitchener.

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Egg sampling at nine sites in the two regions to determine the potential larval population and related defoliation in 1987 indicates continued defoliation in the Prince George Region and suggests increasing defoliation intensity and expansion in area for the Nelson Region (Table).

Moderate defoliation is forecast in most affected areas in Prince George in Pouce Coupe and Taylor areas, while continued severe defoliation is projected for the Farmington area. In the Nelson Region, severe defoliation is projected for areas from Rossland through Trail to Casino and north to China Creek, with an expansion north to Blueberry Creek where severe defoliation is also expected. An expansion east into Montrose and beyond is also possible. The Goat River infestation is projected to cause severe defoliation and may increase in extent.

Recent infestations of forest tent caterpillar in the Prince George Region occurred from 1957-1964 and 1972-1978 and in the Nelson Region from 1959-1964 and 1971-1976. Damage has historically been restricted to branch dieback and increment loss, however, in cases where severe defoliation occurs over several years in a given area, some tree mortality has been reported. Infestations have lasted up to seven years.

Populations often collapse dramatically, after several years of defoliation, due to natural causes. Causal agents may include: mass starvation due to exhausted food supplies prior to larval maturity (each larva can consume the equivalent of eight leaves, mostly in the final moult); unfavorable weather conditions such as early spring freezing temperatures just after egg hatch which could terminate an outbreak, or above average fall temperatures that can kill many larvae within the eggs; birds feeding on young larvae; insect parasites and diseases including viruses and fungus.

In the Nelson Region, parasites and a virus were again present in late instar larvae but at a low level, and barring adverse weather conditions as mentioned above, large populations of the caterpillar are expected. In urban areas this means that as the preferred food supply quickly becomes depleted, almost any green foliage becomes targeted, including not only fruit trees but ornamental shrubs and garden crops as well. Homeowners can best reduce populations and damage by destroying egg masses prior to egg hatch in the spring (generally May). Egg masses containing 150 to 300 eggs each, covered with a silvery-brown protective substance, are found ringed around small twigs during fall and winter months. Early spring larvae can also be readily removed by clipping and burning; larvae are often found clustered together while feeding on opening buds and developing foliage or on the sunny side of trunks or main branches while resting or moulting. The success of such a control program depends in part on timeliness, intensity and extent, as this pest's natural wanderlust in search of food can soon cause it to overrun control areas from adjacent infested areas.

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Table: Location, number of 1985 and 1986 egg masses and predicted defoliation of deciduous stands by forest tent caterpillar in British Columbia in 1987.

Region/Location	Av. DBH (cm)	Av. #Egg Masses new (1986)	old (1985)	Predicted[1] defoliation	Status
PRINCE GEORGE					
5 km S. Pouce Coupe	14	11	19	MOD[2]	decreasing
3 km E. Pouce Coupe	7	3	9	MOD	"
Farmington	12	29	61	SEV	"
Taylor	14	14	25	MOD	"
NELSON					
Rossland-Warfield	10	44	20	SEV	increasing
Casino	9	137	19	SEV	"
Blueberry Cr.	8	12	2	SEV	"
Murphy Cr.	9	62	6	SEV	"
Goat R.	4	8	1	SEV	"

[1]No. egg bands by tree diameter that will cause completion defoliation:

DBH	# egg bands
2.5	2
5.0	5
7.5	9
10.0	11
12.5	14
15.0	19

(from V. Hildahl, A.E. Campbell, 1975)

[2]MOD category extrapolated.

References

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