MAJOR FOREST INSECT PESTS
1991 CONDITIONS AND 1992 PREDICTIONS*

by
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SPRUCE BUDWORM Choristoneura fumiferana (Clem.)

Spruce Budworm infestations in the Northwest Region increased in extent in all areas except Saskatchewan in 1991. Operational aerial spraying of Bacillus thuringiensis var. kurstaki was carried out in Alberta by the province in the Footner Lake, Grande Prairie and Lac La Biche forests using Dipel 132 and Foray 48B. Experimental sprays were carried out in the Peace River and Footner Lake forests using Dipel 13, Dipel 132, Dipel 176, Foray 48B and Foray 75B. No aerial sprays were done in Saskatchewan, Manitoba or the Northwest Terretories.

Summary of spruce budworm defoliation in the Northwest Region, sketch-mapped from aerial and ground surveys in 1990 and 1991

Location	Area of defoliation (ha) 1990	1991	Change
Manitoba	18,985	30,000	+ 58%
Saskatchewan	18,780	15,600	- 17%
Alberta	109,150	141,000	+ 29%
Northwest Territories	113,625	130,000	+ 14%
Totals	260,540	316,600	+ 22%

Results of surveys for spruce budworm defoliation, egg-mass densities, second instar larval (L2) densities, and expected defoliation levels in 1992 for Manitoba and Alberta*

Location	Average defoliation 1991 (%)	Avg. no. egg masses per 10 m^2	Avg. no. moths per trap or avg. L2 per 10 m^2 foliage	Expected defoliation for 1992[a]
MANITOBA				
Birds Hill Prov. Park	13	10 (11)[b]	98[c]	Light
Spruce Woods Prov. Forest	13	76 (76)	290[c]	Moderate
Red Deer River	<1	0 (0)	25[c]	Nil
Duck Mt. Prov. Park	2	0 (0)	5[c]	Nil
Riding Mt Nat'l Park	1	0 (0)	13[c]	Nil
Northwest Angle Prov. Park	2	4 (0)	29[c]	Light
Whiteshell Prov. Park	30	279 (218)	455[c]	Severe
Wanipigow	30	138 (77)	197[c]	Moderate
Hecla Island Prov. Park	5	4 (36)	38[c]	Light
Lake Ste. George	2	0 (0)	32[c]	Nil
Rocky Lake	8	30 (12)	44[c]	Light-moderate
Simonhouse	2	0 (0)	18[c]	Nil
Pisew Fall	3	0 (0)	6[c]	Nil
ALBERTA				
Footner Lake Forest				
Untreated areas	--[d]	--[d]	464*	Moderate-severe
Bt treated areas	--	--	115*	Light
Lac La Biche Forest				
Untreated areas	--	--	419*	Moderate-severe
Bt treated	--	--	47*	Light

[a] Based on egg-mass densities where Light = <25% defoliation (1-15 egg masses); Moderate = 26-50% defoliation (50-100 egg masses); and Severe = >50% defoliation (200+ egg masses).

[b] Values in brackets are for 1990.

[c] Indicates average number of moths per trap.

[d] No data available.

* Indicates average numbers of L2 larvae, estimated over all sample sites; data collected by Alberta Forest Service.

*Information not available for Saskatchewan and Northwest Terretories

ASPEN DEFOLIATORS
FOREST TENT CATERPILLAR Malacosoma disstria Hbn.
LARGE ASPEN TORTRIX Choristoneura conflictana (Wlk.)
BRUCE SPANWORM Operophtera bruceata (Hulst)

The extent of Aspen defoliation continued to decline in 1991 in Alberta, with the primary pest being Forest Tent Caterpillar. Several scattered patches of Large Aspen Tortrix were noted near Twin Lakes, Hawk Hills, Camrose and Bentley. Two moderate to severe areas of Bruce Spanworm were recorded, near Manning and Obed. In Manitoba the extent of moderate to severe defoliation increased significantly in 1991, primarily due to an increase in Forest Tent Caterpillar populations. No significant areas of Aspen defoliation were noted in Saskatchewan or the Northwest Territories. Predicted defoliation for 1992, based on egg band surveys of the Forest Tent Caterpillar, is none or light for most areas. Moderate to severe defoliation is predicted for two areas only, in Alberta south of Bonneyville, and in Manitoba near Centre Three Rivers.

Summary of moderate-severe defoliation of trembling aspen by the forest tent caterpillar and large aspen tortrix in 1991

Province	Area of defoliation in 1990 (ha)	Area of defoliation in 1991 (ha)
Manitoba	15,178	58,082[a] 12,691[b]
Saskatchewan	260,922[c]	--[d]
Alberta	609,272[c]	129,200[c]

[a] Estimated area of defoliation by forest tent caterpillar.
[b] Estimated area of defoliation by large aspen tortrix.
[c] Estimated as 20% of the total land area mapped.
[d] Areas of aspen defoliation were not mapped in 1991.

DUTCH ELM DISEASE Ophiostoma ulmi (Buis.) Nannf.

It has been shown in 1991 that Dutch Elm Disease is continuing to spread into the Northwest Region. This disease is now firmly established in southern Manitoba and has been confirmed in numerous urban centres throughout this area. In Saskatchewan, eleven new sites with DED-infected trees, ranging across the southern and eastern parts of the province, were detected through ground and aerial surveys. In 1990 this disease had only been recorded from a single site near Estevan. However, some of the new sites may be several years old and previously overlooked. There are no predicitons for DED for 1992. No Dutch Elm Disease has been recorded in Alberta or the Northwest Territories.

GYPSY MOTH Lymantria dispar L.

Adult male Gypsy Moths were caught in eight locations in 1991, five in Manitoba across the southern end of the province, one in Saskatchewan at Moose Jaw, and two in Alberta, at Calgary and Drumheller. This is in contrast to the single record of Gypsy Moth

in 1990 at Whiteshell Provincial Park in Manitoba. Surveys have not yet discovered established larval populations. No predictions can be made for 1992.