

Canada
PFRC
Pest. rept
92-15

Forestry Forêts
Canada Canada

PEST REPORT

Pacific and Yukon Region • Pacific Forestry Centre • 506 West Burnside Road • Victoria, B.C. • V8Z 1M5

FIDS Report 92-15

AUGUST 1992

The Impact of Defoliation by Gray Spruce Looper on Western Hemlock in the Nelson Forest Region

A.J Stewart
Forest Insect & Disease Survey

Successive years of defoliation of semi-mature and mature western hemlock by grey spruce looper, Caripeta divisata resulted in mortality of an average of 46% (range 14-78%), of the trees in 1992, at three of five previously defoliated stands in the West Kootenay, (Table).

The highest incidence of tree mortality was recorded at Saddle Bay near Slocan Lake, and resulted from severe defoliation in 1990 and 1991. Tree mortality declined with the severity of defoliation to 46% at Saddle Mountain and 14% at Wragge Point, where defoliation was severe in 1990 and moderate and light, respectively, in 1991.

There was no tree mortality at two sites near Arrow lakes, where defoliation was moderate or light in 1990 and 1991, but dieback of the upper crown was 20% and 36% at each site, respectively.

The outbreak by this defoliator in 1990 and 1991 was the first recorded in the Nelson Region. An earlier outbreak had occurred in the western part of the Prince Rupert Region in the 1960s. Increased infection of larvae by a naturally occurring fungal pathogen is expected to reduce populations and defoliation later this year.

.../2

Table Impact of defoliation by gray spruce looper, *Caripeta divisata*, on western hemlock in five stands surveyed in the Nelson Forest Region in 1992.

| Location | Defoliation -1 | | | | | | Dieback -2 | | | |
|----------------------|----------------|------|--------------------|-----|-------|-----|------------|-----|-------|-----|
| | 1990 | 1991 | -- Avg. accum % -- | | | | Crown | | | |
| | | | Upper | Mid | Lower | All | Upper | Mid | Lower | All |
| Saddle Bay | S | S | 100 | 98 | 96 | 98 | 96 | 80 | 78 | 78 |
| Saddle Mtn. | S | M | 100 | 96 | 92 | 96 | 98 | 64 | 52 | 46 |
| Wragge Point | S | L | 91 | 80 | 68 | 80 | 64 | 30 | 14 | 14 |
| Nakusp | M | M | 64 | 47 | 31 | 47 | 36 | 0 | 0 | 0 |
| MacDonald Prov. Park | M | L | 87 | 56 | 39 | 61 | 20 | 0 | 0 | 0 |

-1 Defoliation:

- Light = less than 25% of crown defoliated, usually in upper crown
- Moderate = 25-65% defoliation, usually into the mid-crown
- Severe = more than 65% defoliation throughout the crown

-2 Dieback = entire crown and tree mortality

* * *