

TECHNICAL NOTE

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FOREST INSECTS AND DISEASES IN FUNDY NATIONAL PARK IN 1994

Personnel of the Forest Insect and Disease Survey regularly visit national parks to determine forest insect and disease conditions. Some of the more noteworthy conditions encountered in Fundy National Park are discussed below.

Throughout this report, the terms trace (1-5%), light (6-29%), moderate (30-69%), and severe (70-100%) are used to describe the level of defoliation, other injury, or insect population levels.

Fundy National Park is located in southeastern New Brunswick, along the Fundy coast. It is mainly in the Fundy Bay Ecoregion with a small part in the Maritime Uplands Ecoregion, described by Loucks (1962)¹. Red spruce, balsam fir, and red maple are the most abundant species, although white spruce, white birch, yellow birch, sugar maple and beech are not uncommon.

BIRCH CASEBEARER initially feeds as a leafminer, then the larva vacates the mine and builds a cigar-shaped case in which it lives and feeds. Severe attack can cause the leaves to turn brown and give trees a scorched appearance. At the northern end of the Park near Wolfe Lake, along Tracy and Laverty Lake trail this insect was quite common causing light damage on 90% of white birch and yellow birch. Light and moderate attack occurred on speckled alder along the road from Park headquarters to Point Wolfe.

HEMLOCK LOOPER mainly a defoliator of balsam fir, is a wasteful feeder, often consuming only parts of needles that later turn reddish brown. Of the several kinds of loopers that attack conifers, the hemlock looper is considered a pest with considerable damage potential. High populations of this insect can kill trees in 1 year. Various surveys carried out in the Park, show evidence of this insect and low numbers of larvae were found at several locations. Light trap catches were up significantly from 1993, when 179 moths were caught compared to 689 in 1994. Pheromone trap catches were also up from 1993, when an average of 180 moths were trapped compared to 240 in 1994.

¹Loucks, O.L. 1962. A forest classification for the Maritime Provinces. Proc. Nova Scotian Institute of Science 25(2): 133-139.

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FOREST TENT CATERPILLAR feeds on a wide variety of hardwood trees with a preference for trembling aspen, oak, apple, birch, and cherry. The size of the area defoliated by this insect continued to increase in central New Brunswick in 1994. No noticeable defoliation by this insect was found in Fundy National Park; however, the number of moths caught at a light trap operated by Park staff increased from 427 in 1993 to 520 in 1994.

The **WINTER DRYING** that damaged numerous red spruce in Fundy National Park in 1993 was still present in 1994. However, incidence and severity of damage was less than in 1993. Affected red spruce were present along Route 114, at Point Wolfe, Forty-Five road and Laverty Trail Road. Most trees affected were the same trees as in 1993, with some shoot, branch, and top mortality occurring.

GYPSY MOTH have become much more common in New Brunswick in the past 2 years. The destructive feeding stage is a large, hairy caterpillar with five pairs of blue and six pairs of red spots on its back. The female moth is unable to fly, making the spread of this pest largely dependent on the transport of eggs or other life stages by humans, especially on camping equipment and vehicles. For this reason, tourist areas like Fundy National Park with their large number of visitors, are potential entry points for gypsy moth from infested areas. Twenty-five gypsy moth pheromone traps placed by Park staff in 1994 caught a total of 16 male moths at ten locations. No other life stages of the gypsy moth were found in the Park. Visitors are requested to report any suspected gypsy moth finds to Park personnel.

BIRCH DECLINE has been monitored at a series of plots established along the Fundy Coast since 1982. As a result of recurring, severe foliage browning and premature leaf fall, a series of plots to monitor birch decline were established along the Fundy Coast. Insects and disease have been ruled out as causal agents. Further research has indicated that acid fog and ozone are likely responsible. Although foliage browning was quite noticeable in the Park on white birch, in early August, browning was only trace at the plot near Point Wolfe Campground.

Monitoring continued at the **ARNEWS** plot, established in the Park in 1993. ARNEWS is a long-term biomonitoring program designed to detect changes in forest vegetation and soils. ARNEWS plots were established and assessed by FIDS to identify and measure all types of forest damage, separating damage caused by natural factors from that caused by anthropogenic factors. In 1994, all plot trees were assessed for tree condition; off-plot trees were assessed for insect, disease, and acid rain problems. No major problems were found. A few of the more common and damaging organisms found were; **birch leaf miners**, leaf discoloration caused by **septoria**, **maple bladder** and **spindle galls** and **European spruce sawfly**.

Staff of Fundy National Park in cooperation with the Canadian Forest Service operate a **light trap** in the Park. Light traps are valuable for detecting introduced or quarantine-related and native forest insects. The table below lists a few examples of forest insects and the numbers caught during the last 5 years, showing the relative population trends. For those insects capable of large outbreaks, light traps are able to provide information on possible upcoming outbreaks.

INSECT	1990	1991	1992	1993	1994
Forest tent caterpillar	5	16	37	427	520
Hemlock looper	64	31	48	179	689
November moth	3	13	18	31	104
Bruce spanworm and/or winter moth	34	85	24	77	60

Some other forest insects and diseases that were found in the Park include the following: **birch sawfly** caused light defoliation on speckled alder and birches at three locations in the Park; a few **fall webworm nests** were present along Shepody Road; **wax filament scale** on white birch was present at fairly high numbers near Point Wolfe campground, at East Branch Trail, at Forty-Five River on Forty-Five Road and in the Park Headquarters Campground; **sirocooccus shoot blight** was still present along Route 114, near Park Headquarters, and at junction of the Herring Cove and Point Wolfe Roads, where shoot, branch and tree mortality occurred on red pine.

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