SURVEY BULLETIN

GREAT LAKES FOREST RESEARCH CENTRE
DEPARTMENT OF THE ENVIRONMENT
- BOX 490 -
CANADIAN FORESTRY SERVICE
SAULT STE. MARIE, ONTARIO

FOREST INSECT AND DISEASE CONDITIONS IN ONTARIO

JUNE - JULY 1972
(The second in a series of three bulletins issued annually)

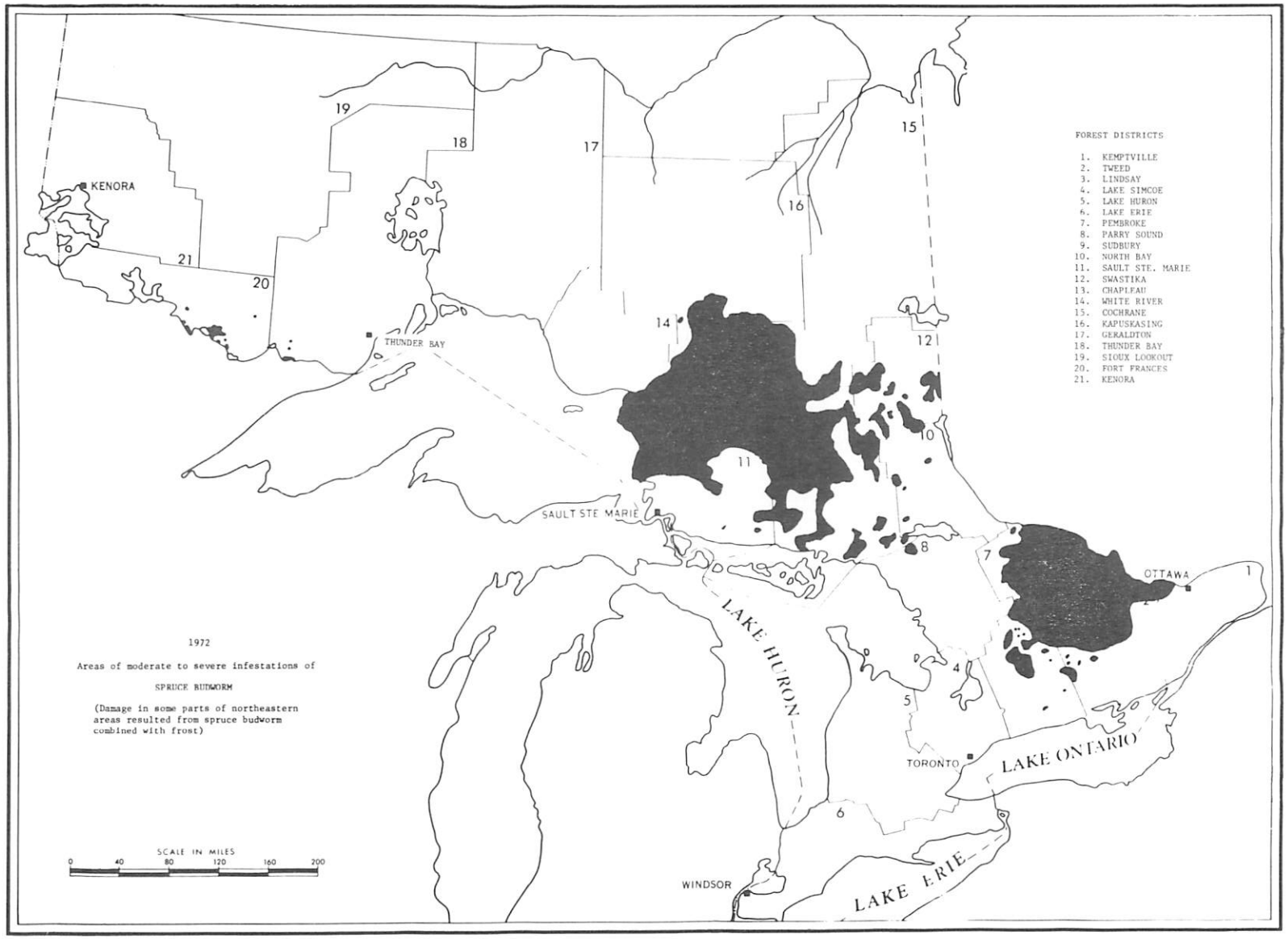
FOREST INSECTS

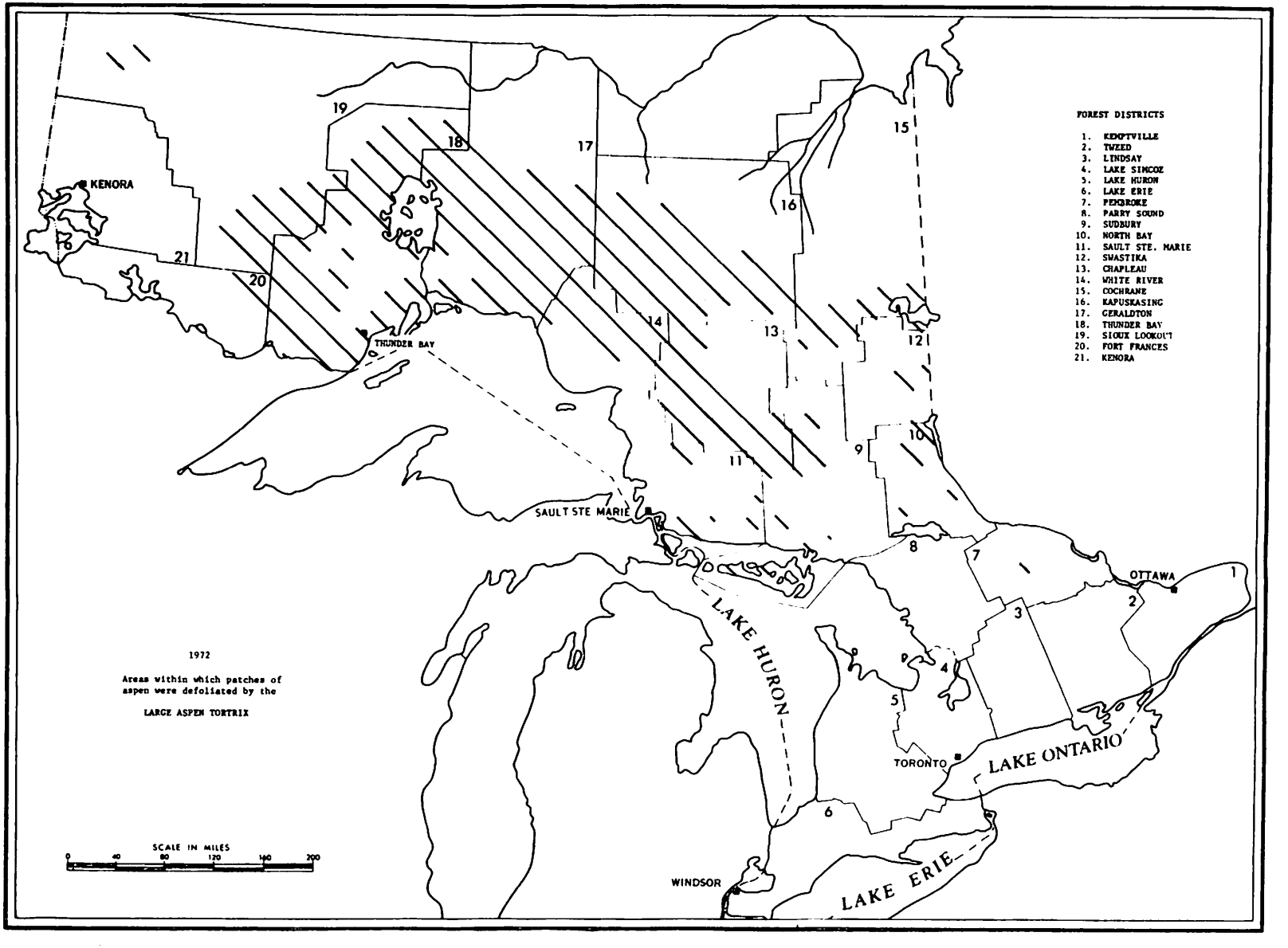
Spruce budworm, *Choristoneura fumiferana* (Clem.)

The current spruce budworm outbreak (see accompanying map) reached its enormous size over the past 5 or 6 years owing to a number of years of weather conditions favorable to budworm survival. However, 1972 was certainly not one of these. The full effect that deleterious weather had on populations is not yet known, but it is clear that budworm numbers were greatly reduced in some parts of the outbreak, especially in northeastern Ontario.

In northwestern Ontario moderate to severe defoliation was confined to an area of less than 100,000 acres, most of which was located in Quetico Provincial Park, between Poohbah Lake and Martin Bay. A small pocket of defoliation was mapped south of Kawa Bay (Kawnipi Lake). Infestations located west of Quetico Provincial Park, between Lac la Croix and Namakan Lake, decreased considerably. In Thunder Bay District an infestation near Mountain Lake subsided but damage was again mapped along the north shore of Gunflint Lake and in the vicinity of Northern Light and Granite lakes.

In northeastern Ontario the outbreak enlarged southward as forecast in the districts of Sault Ste. Marie and Sudbury. In a large part of Chapleau District and in the southern parts of Cochrane and Kapuskasing districts, budworm numbers during May approached those predicted but in early June freezing temperatures caused a marked reduction. Complete destruction of the new shoots of balsam resulted in nearly complete budworm mortality, but where new shoots survived, especially on white and black spruce which were less severely injured by frost, variable proportions of budworm survived. Because of this complication, the accompanying map shows areas damaged by the spruce budworm or by a combination of budworm feeding and frost. Areas damaged by frost alone are not shown. The total area infested before frosts increased to 21,000 square miles from 13,500 square miles in 1971.


KENORA
THUNDER BAY
SAULT STE MARIE
OTTAWA
TORONTO
WINDSOR
LAKE HURON
LAKE ONTARIO
LAKE ERIE
FOREST DISTRICTS
1. KEMPTVILLE
2. TWEED
3. LINDSAY
4. LAKE SIMCOE
5. LAKE HURON
6. LAKE ERIE
7. PEMBROKE
8. PARRY SOUND
9. SUDBURY
10. NORTH BAY
11. SAULT STE. MARIE
12. SWASTIKA
13. CHAPLEAU
14. WHITE RIVER
15. COCHRANE
16. KAPUSKASING
17. GERALDTON
18. THUNDER BAY
19. SIOUX LOOKOUT
20. FORT FRANCES
21. KENORA
1972
Areas of moderate to severe infestations of
SPRUCE BUDWORM
(Damage in some parts of northeastern areas resulted from spruce budworm combined with frost)
SCALE IN MILES
0 40 80 120 160 200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1972
Areas within which patches of aspen were defoliated by the
LARGE ASPEN TORTRIX
SCALE IN MILES
0 40 80 120 160 200

The damage map for southeastern Ontario shows a marked westward and southward extension of continuous infestation, with a remarkably close relationship to damage forecasts.

Little tree mortality attributable to the budworm has occurred as yet in the infested areas. Some suppressed trees have been killed and up to one-half of the balsam have been killed in a few of the most heavily and consistently attacked stands at the center of the outbreak in northeastern Ontario. In southeastern Ontario mortality of balsam and spruce attributable to other causes has been accentuated by budworm feeding in the Bonnechere Valley near Renfrew.

Plans have been finalized for the aerial photography of two areas, using infrared and natural color film at different scales to develop expertise in following operationally, by remote sensing, the advance of tree mortality as the outbreak continues.

Jack-pine budworm, *Choristoneura pinus pinus* Free.

The wave of unprecedented damage over the past 6 years in central Ontario seems to have waned. Only one active infestation was reported in 1972, namely in the Wallbridge Township area in the northwestern corner of the Parry Sound District. Here the extent of moderate to severe infestation diminished by approximately one-third over 1971.

In northwestern Ontario 75 square miles of infestation, detected in 1971 southeast of Dryden, subsided.

Large aspen tortrix, *Choristoneura conflictana* Wlk.

Most stands of trembling aspen showed evidence of defoliation within a band extending from southern Sioux Lookout and eastern Fort Frances districts eastward across northern Ontario to the Quebec border (see accompanying map). Apart from this outbreak the largest and most conspicuous infestations were located around Red Lake (500 square miles), in the Severn River watershed beyond the northern limit of the map (250 square miles), north of Lake Temiskaming along the Ontario-Quebec border (1200 square miles), in several parts of southern Sault Ste. Marie and Sudbury districts and in a small part of Algonquin Provincial Park.

The longevity of this outbreak is unusual. In Conmee Township of the Thunder Bay District, damage has been evident for 5 consecutive years, whereas other recorded outbreaks in Ontario have been of 2 or 3 years' duration.

Forest tent caterpillar, *Malacosoma disstria* Hbn.

A remnant of the last outbreak which occurred in northwestern Ontario in the 1960's has persisted in the vicinity of Fort Frances since 1965, but in 1972 it virtually disappeared owing to a poor hatch of eggs in early May. This apparently resulted from an unusual sequence of warm temperatures followed by a prolonged period of cool spring weather at the time of hatch. Population levels in a small infestation along the Kenora-Fort Frances border declined to a lesser degree, but farther north between Dryden and Vermilion Bay the weather had little deleterious effect on hatch with five new pockets of moderate to severe defoliation detected.

Elsewhere in Ontario small, heavy infestations occurred, one near Grant north of the CNR in the Geraldton District and another centered in Shuell Township in Kapuskasing District. Infestations were found for the first time in many years in the New Liskeard-Thornloe area and south of Temagami in the Swastika and North Bay districts, but damage was light. An increase in the number of single-larval collections was reported from several other districts.

Eastern tent caterpillar, *Malacosoma americanum* F.

Extremely high numbers of unsightly tents and severe defoliation of black cherry, choke cherry, wild apple and hawthorne were reported in the six southernmost forest districts this spring. Counts of the number of feeding tents were among the highest on record. Trees that had been completely defoliated in May and June flushed new leaves by mid-July.

Oak leaf shredder, *Croesia semipurpurana* (Kft.)

A number of new infestations of this spring defoliator of red oak were reported in the southern half of the Province while most of the older infestations persisted at damage levels at least equal to those of 1971. New infestations occurred in the Thessalon-Blind River area of the Sault Ste. Marie District, on Manitoulin Island in the Sudbury District, and in six townships in the eastern end of the Pembroke District. Older infestations in Durham County and in the Vespra, Oro and Tiny townships in the Lake Simcoe District remained virtually the same as last year. Infestations in the vicinity of Sault Ste. Marie were again heavy.

Cedar leaf miners, *Argyresthia canadensis* Free., *A. aureoargentella* Brower., *A. thuiella* Pack. and *Pulicalvaria thujaella* (Kft.)

Severe browning of eastern white cedar foliage was again caused by a variable combination of these cedar leaf miners in southern Ontario. The amount of damage was greatest in southeastern Ontario from the Ottawa

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River between Arnprior and Ottawa south to the St. Lawrence and across the southern part of the Tweed District. Browning of cedar also extended westward in the southern part of the Lindsay and Lake Simcoe districts. In the Lake Huron District, spotty damage occurred in Grey, Bruce, Wellington, Brant and Oxford counties and in the Lake Erie District infestations occurred in parts of Norfolk and Elgin counties.

European pine sawfly, *Neodiprion sertifer* (Geoff.)

Sawfly numbers were again high, causing defoliation of Scots, red and jack pine plantings at many locations in southwestern Ontario. Defoliation was most severe in the northern two counties of Lake Huron District, southwest of Lake Simcoe in the Lake Simcoe District and around St. Williams in the Lake Erie District. In southeastern Ontario, the insect is still confined to plantations in the southern portions of Lindsay and Tweed districts and to ornamental pines in the City of Ottawa.

In the Parry Sound District, Mugho and Austrian pine ball stock that had been planted in Muskoka and Sherborne townships by the Ontario Ministry of Transport and Communications was found to be infested and control measures were carried out.

On Manitoulin Island where six groups of Scots pine plantations have been infested since at least 1966, numbers of colonies present have edged upwards. The insect has persisted in the City of Sault Ste. Marie.

The European pine shoot moth, *Rhyacionia buoliana* Schiff.

This pest caused more shoot damage to Scots and red pine in southwestern Ontario than in 1971, especially in Eramosa, Brant and Proton townships in the Lake Huron District. Heavy infestations were located near Shelburne and north of Primrose in the Lake Simcoe District, and in the Springwater Conservation area in the Lake Erie District.

Satin moth, *Stilpnotia salicis* Linn.

This is the first report of the satin moth in Ontario.

The insect was found defoliating silver poplar in Cornwall Township (Concession VII) in the Kemptville District. An intensive survey of Glengarry County made after the initial find revealed the presence of satin moth in Lancaster Township as well.

This introduced pest was first recorded in North America near Boston in 1920. By 1951 it was known in eastern Canada as far west as Montreal. It also occurs in parts of British Columbia. Principally

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exotic poplar but also native poplar and willow are attacked. Satin moth is presently considered to have some potential as a nuisance pest preying on certain shade trees and perhaps on hybrid poplar, but not as a major forest pest.

Other noteworthy insects

The following forest insect infestations may be of slightly less concern to forest managers and landowners but are being recorded by the Survey Unit as background information:

Moderate to heavy infestations of the pine spittle bug, *Aphrophora parallela* (Say), were recorded in several Scots pine plantations of southern Ontario.

The European snout weevil, *Phyllobius oblongus* Linn., again defoliated a wide variety of deciduous hosts at the golf course near Mindemoya on Manitoulin Island.

Around Burchell Lake in the Thunder Bay District and near Marathon and Geraldton, several insects, but primarily *Zeiraphera* spp., caused damage to the new shoots of white spruce similar to that caused by the spruce budworm.

Conophthorus banksianae McPherson damaged approximately 10% of the leading shoots of young jack pine between Hudson and Dryden in northwestern Ontario.

The damaging outbreak of balsam fir sawfly, *Neodiprion abietis* Complex, centered in the Ottawa Valley has abated except for infestations in the southwestern corner of the Pembroke District.

The *Neodiprion* sawflies, *N. pratti banksianae* Roh. and *N. nanulus nanulus* Schedl, were less troublesome in 1972 except for heavy infestations on ornamental pines in the City of Thunder Bay.

Severe browning of aspen foliage in the French and Nym lakes area of northwestern Ontario was caused by the leaf miner, *Lithocolletis ontario* Free.

Heaviest damage by the yellow-headed spruce sawfly, *Pikonema alaskensis* (Roh.), a persistent pest of young, open-grown white spruce, was reported in the districts of Kenora, Fort Frances and Swastika.

Scleroderris lagerbergii Gremmen

Satisfactory progress was made on special Scleroderris surveys in northern Ontario to determine more completely the presence of this disease in forest nurseries and adjacent stands, and to ascertain the location, composition, origin and size of stands in which the level of Scleroderris infection is high ("hot spots"). A general resumé of results should be available for the third and final bulletin describing forest insect and disease conditions in 1972.

Needle cast of pine, *Coleosporium asterum* (Diet.) Syd.

This disease was widespread on hard pines again in 1972 but was found at moderate or heavy levels of infection only in two red pine plantations in Burleigh Township in the Lindsay District.

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