

NURSERY SANITATION ZONES

White Pine Blister Rust Control

J. E. RILEY, JR.

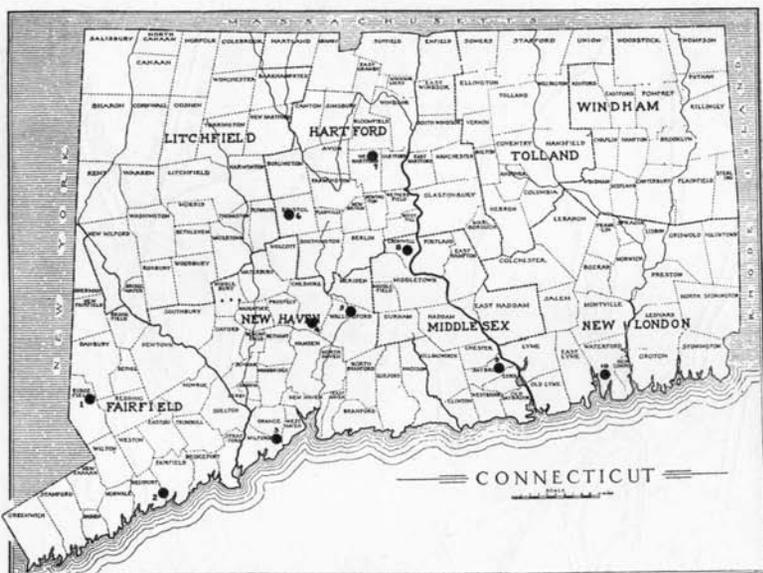


FIGURE 2. Map of Connecticut. Black dots indicate location of Nursery Sanitation Zones, within which no currants or gooseberries may be grown.

Connecticut Agricultural Experiment Station
New Haven

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At present there are no state or federal regulations requiring the nurseries that grow white pine to establish and maintain Sanitation Zones unless they wish to qualify for interstate shipment of white pines. The Connecticut Agricultural Experiment Station,

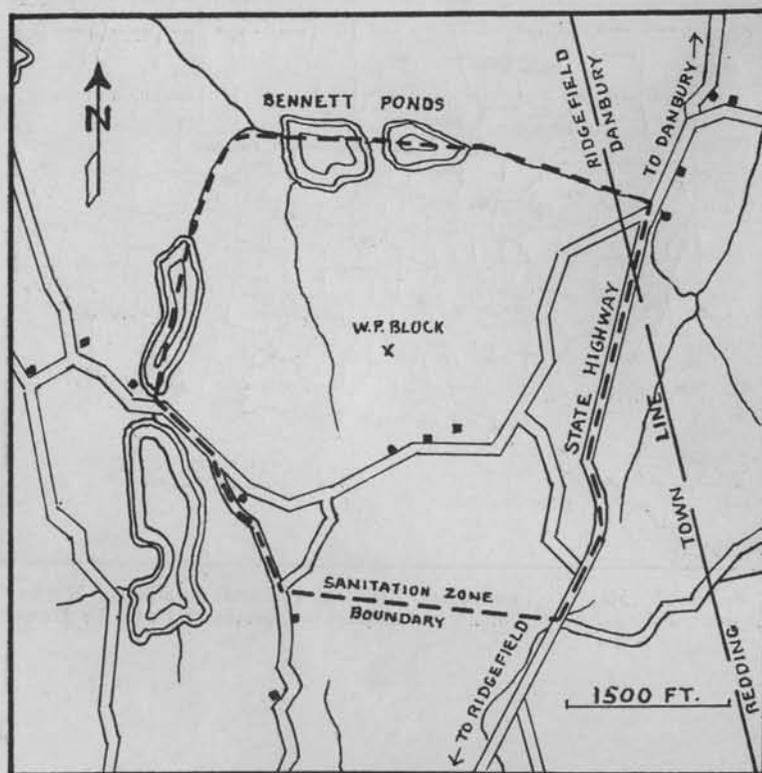


FIGURE 3. Map of sections of towns of Ridgefield, Danbury and Redding. Dotted line surrounds area within which no Ribes may be grown. Outpost Nurseries.

however, wishes to encourage the establishment of such zones around those nurseries doing an appreciable volume of white pine business, as a step in the control of the white pine blister

rust and as a protection to the nurseries themselves and to the purchasers of white pine ornamental and reforestation stock. The Forestry Department of the Station will cooperate with the nurserymen in the establishment of such zones and will assume full responsibility for their maintenance with the financial help of the cooperating nurseries.

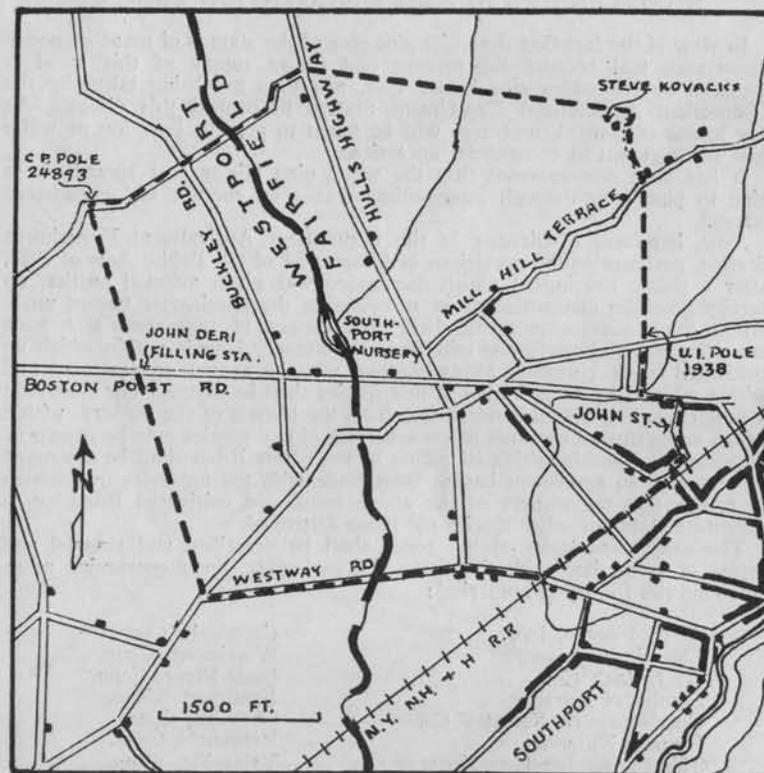


FIGURE 4. Map of sections of towns of Fairfield and Westport. Dotted line surrounds area within which no Ribes may be grown.

Ten nurseries have established such zones, the location of which are shown on the state map by black dots. The boundaries of these Sanitation Zones are indicated by the dotted lines on the section maps. No currant or gooseberry plants may be grown within these areas.

QUARANTINE ORDER

STATE OF CONNECTICUT
 AGRICULTURAL EXPERIMENT STATION
 NEW HAVEN, CONN.

Quarantine Order No. 17

CONCERNING NURSERY SANITATION ZONES

In view of the fact that the white pine crop of the state is of great economic importance and because the present and future supply of this wood is menaced by the white pine blister rust, measures are being taken by the Connecticut Agricultural Experiment Station to control this disease. As one means of control, measures will be taken to prevent infection of white pine stock grown in commercial nurseries.

It has been demonstrated that the white pine blister rust spreads from pine to pine only through intermediate stages on currant and gooseberry leaves.

Now, herefore, I, Director of the Connecticut Agricultural Experiment Station, pursuant to the provisions of Chapter 31 of the Public Acts of 1927, after a public hearing of which due notice was given affected parties, do hereby proclaim quarantine areas surrounding the hereinafter named nurseries. Such quarantine areas shall each consist of two zones¹; a zone extending approximately one mile from the nursery bounds within which no cultivated black currants, *Ribes nigrum*, may be grown or possessed and within which all present bushes of this species shall be destroyed or removed; a zone extending fifteen hundred feet from the bounds of the nursery, within which no cultivated currants or gooseberries of any species may be grown or possessed and within which all plants of the genus *Ribes* shall be destroyed or removed, an agreement having been made with the nurseries in question to compensate the owners of the above mentioned cultivated *Ribes* or to substitute plants of other species for those destroyed.

The exact boundaries of the zones shall be described and mapped and copies of same filed with the State Entomologist. Such quarantine areas surround the following nurseries²:

A. N. Pierson, Inc.
 Elm City Nursery
 H. J. Zack Co.
 Southport Nursery
 North-Eastern Forestry Co.
 Outpost Nurseries
 The Barnes Brothers Nursery Co.
 Verkade's Nursery
 Sierman's Nursery

Cromwell, Conn.
 Woodmont, Conn.
 Deep River, Conn.
 Southport, Conn.
 Cheshire, Conn.
 Ridgefield, Conn.
 Yalesville, Conn.
 Waterford, Conn.
 W. Hartford, Conn.

This quarantine order becomes effective October 1, 1928.

WILLIAM L. SLATE,
 Director.

JOHN H. TRUMBULL,
 Governor.

¹ Since the placing of this quarantine a state law, quoted later in this bulletin, has banned the European black currant throughout the State.

² A sanitation zone is being established at the Bristol Nursery, Bristol, Conn., but has not yet been officially declared.

THE WHITE PINE BLISTER RUST

The white pine blister rust, *Cronartium ribicola* Fisch, is a destructive fungus that lives part of its life on the leaves of currant and gooseberry plants and the rest of its life in the bark of white or five-needled pines. It reproduces itself by means of seed-like bodies called spores, which are carried by the wind from plant to plant. These spores are of three kinds. Those produced

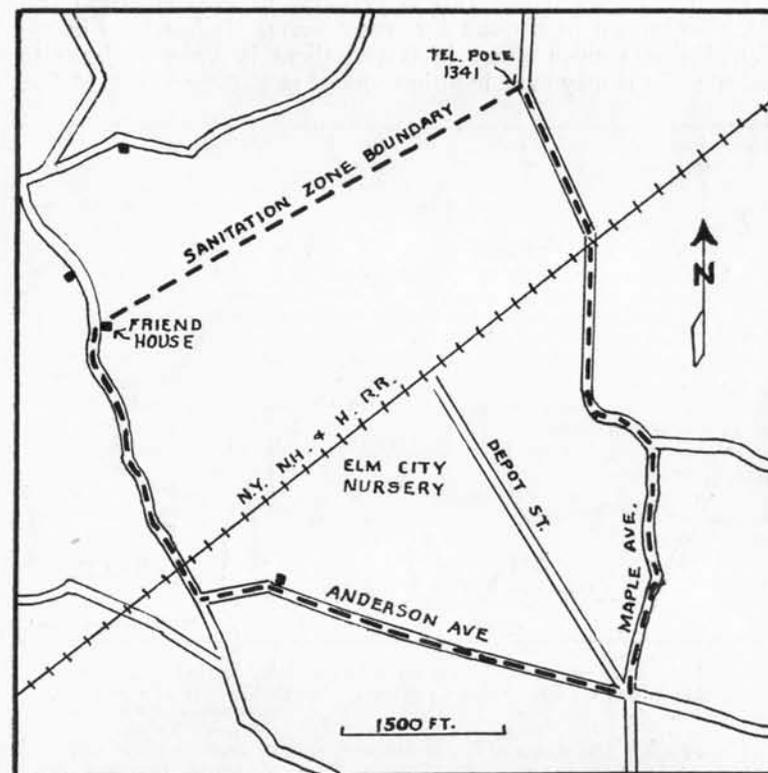


FIGURE 5. Map of sections of towns of Milford and Orange. Dotted line surrounds area within which no *Ribes* may be grown. Elm City Nursery.

in the orange-yellow blisters of diseased white pines carry the rust to leaves of currants and gooseberries in the spring and early summer. The spores from the rust-colored spots on the under side of infected currant and gooseberry leaves carry the disease during the summer to other currant and gooseberry leaves. From late June until the leaves drop in the fall the fungus develops brown, hair-like projections on the under side of the diseased

leaves. These outgrowths produce the spores that infect white pines, thus completing the life cycle of the fungus. The white pine blister rust cannot spread directly from tree to tree, therefore it may be controlled through the elimination of all currants and gooseberries within infecting distance of white pines.

History

The white pine blister rust is probably of Asiatic origin and has been known in Europe for many years. It has been in the United States since about 1898 and there is some evidence to indicate that it may have been introduced at Kittery Point, Maine,

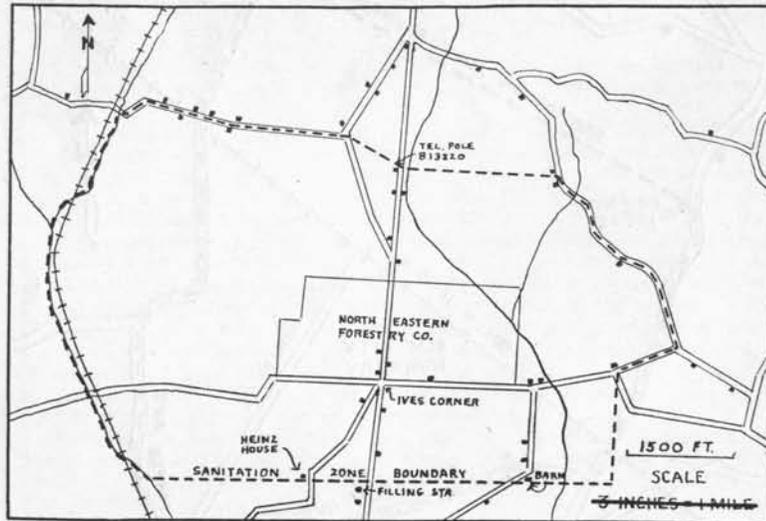


FIGURE 6. Map of section of town of Cheshire. Dotted line surrounds area within which no Ribes may be grown. North-Eastern Forestry Co.

on imported black currants. However, it was first recognized and reported on cultivated black currants at Geneva, N. Y., in 1906. The rust was brought into this country and widely distributed throughout New England and New York on white pine nursery stock before the enactment of the Federal Quarantine Act in 1912. The Connecticut Agricultural Experiment Station identified it on some imported nursery stock being planted at Wilton, Conn., in 1909.

Distribution

The rust is now present in New England, New York, Pennsylvania, New Jersey, Michigan, Minnesota, Wisconsin, Washington, Oregon, Idaho and Montana. In Connecticut it can be found

generally distributed on Ribes throughout the state. It is very common on white pines in northern Litchfield county; it is more or less prevalent on pines throughout the natural white pine sections of northern Connecticut, and is occasionally found on pines in the rest of the state.

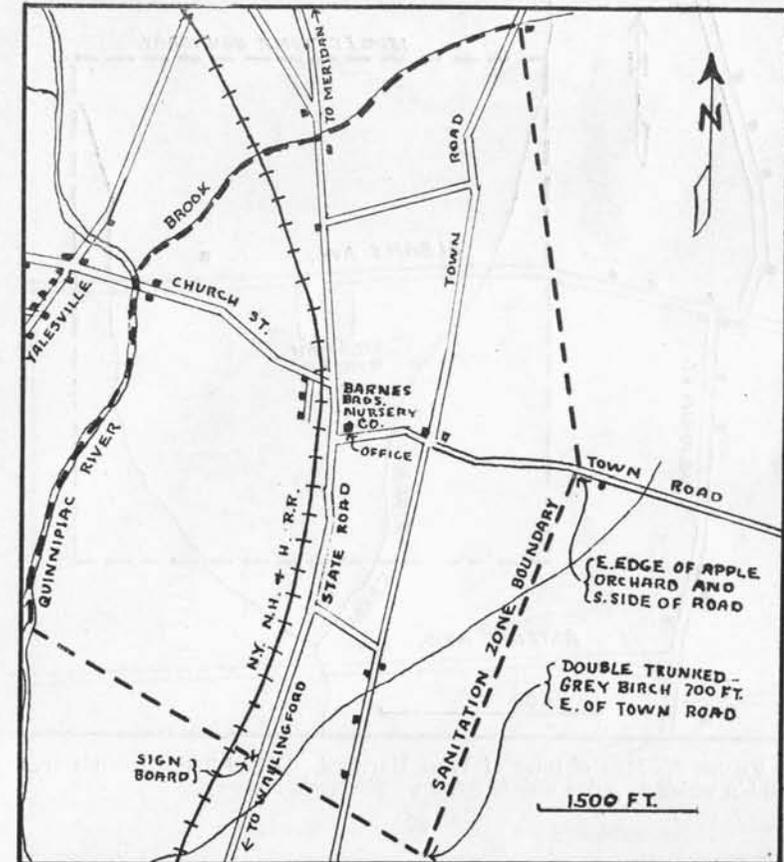


FIGURE 7. Map of section of town of Wallingford. Dotted line surrounds area within which no Ribes may be grown. Barnes Brothers Nursery Co.

Destructive Possibilities

The white pine blister rust has all the destructive potentialities of the chestnut blight, although it accomplishes its results more slowly and consequently less spectacularly. White pine is one of Connecticut's most valuable forest tree species and one highly

valued for ornamental purposes. The insurance, therefore, of disease free nursery stock is of economic importance that far outweighs the commercial importance of currants and gooseberries.

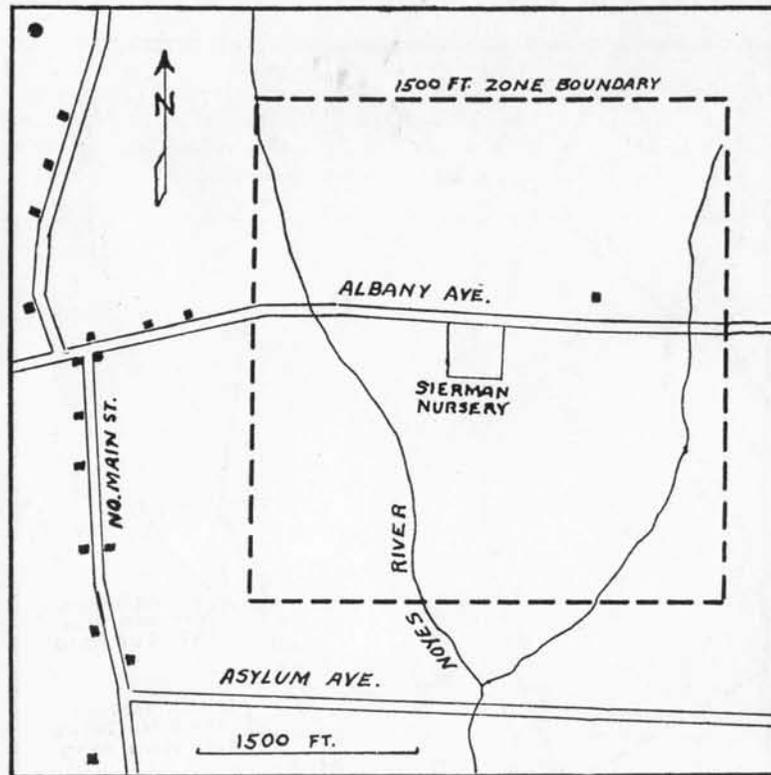


FIGURE 8. Map of town of West Hartford. Dotted line surrounds area within which no Ribes may be grown. Sierman's Nursery.

REGULATIONS

The interstate movement of white pines and of currant and gooseberry plants is prohibited by Federal Quarantine 63,¹ except in compliance with its very stringent regulations.

¹ A copy of this quarantine order may be obtained from the Plant Federal Quarantine and Control Administration, United States Department of Agriculture, Washington, D. C. A digest of those parts of the order that apply to shipments from Connecticut is being prepared and may be had by writing to the State Agricultural Experiment Station, New Haven.

State regulations make the distribution within Connecticut, of Connecticut nursery grown white pine stock, legal only under permit from the State Nursery Inspector. Nursery stock showing a serious disease, such as the white pine blister rust, is destroyed. This inspection, however, does not in itself guarantee

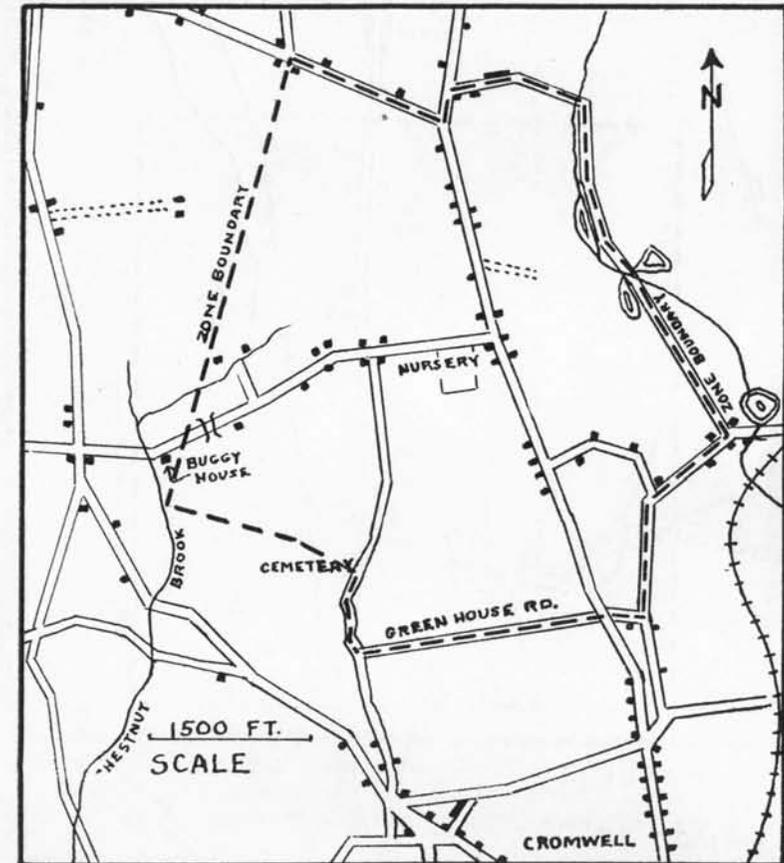


FIGURE 9. Map of section of town of Cromwell. Dotted line surrounds area within which no Ribes may be grown. A. N. Pierson, Inc.

that the white pine stock is free from disease when shipped, because it is impossible in many cases to recognize the disease by field inspection until two or more years after the rust has been in the tree. Therefore the only assurance the purchaser of such stock has that it is free from this disease is when it has been grown from seed in a Ribes-free control area.

In view of the facts that infection on pine may take place over a distance of one mile from diseased European black currants, *Ribes nigrum*, and 900 feet, under rare conditions possibly over greater distances, from other *Ribes*, the control area or sanitation zone must extend 1,500 feet from the block in which the white

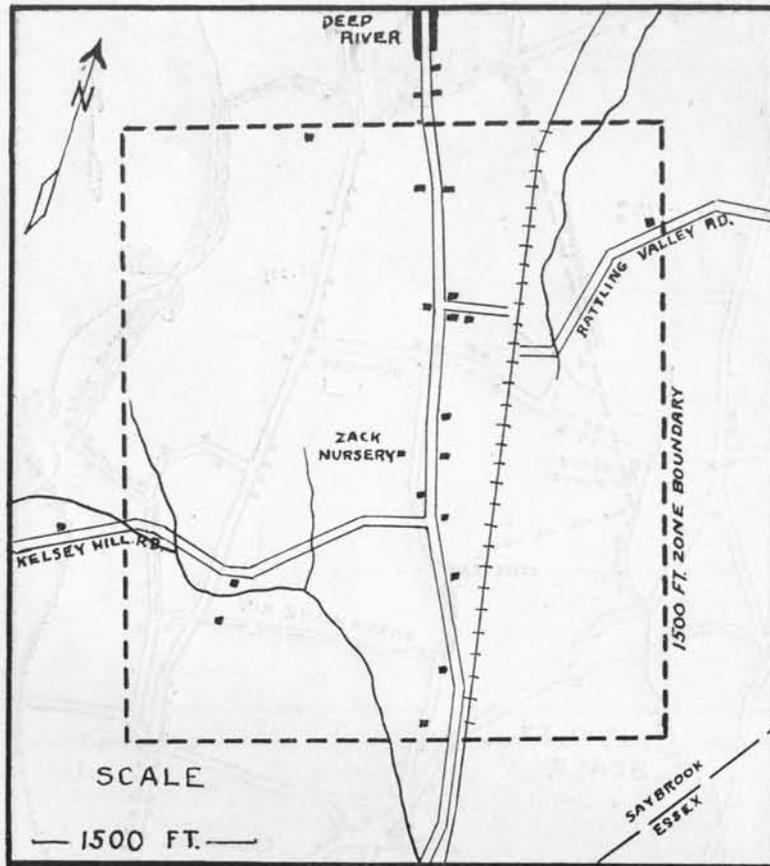


FIGURE 10. Map of section of town of Saybrook. Dotted line surrounds area within which no *Ribes* may be grown. H. J. Zack Co.

pine is grown. Compliance with the mile zone requirement that pertains to the elimination of European black currants in the vicinity should offer no difficulties, owing to the fact that the state law completely prohibits the harboring of this species anywhere in the state. State Quarantine Order No. 17 establishes such zones around certain cooperating nurseries. Future quaran-

tine orders may establish additional zones at other nurseries that wish to cooperate with the Station in this matter.

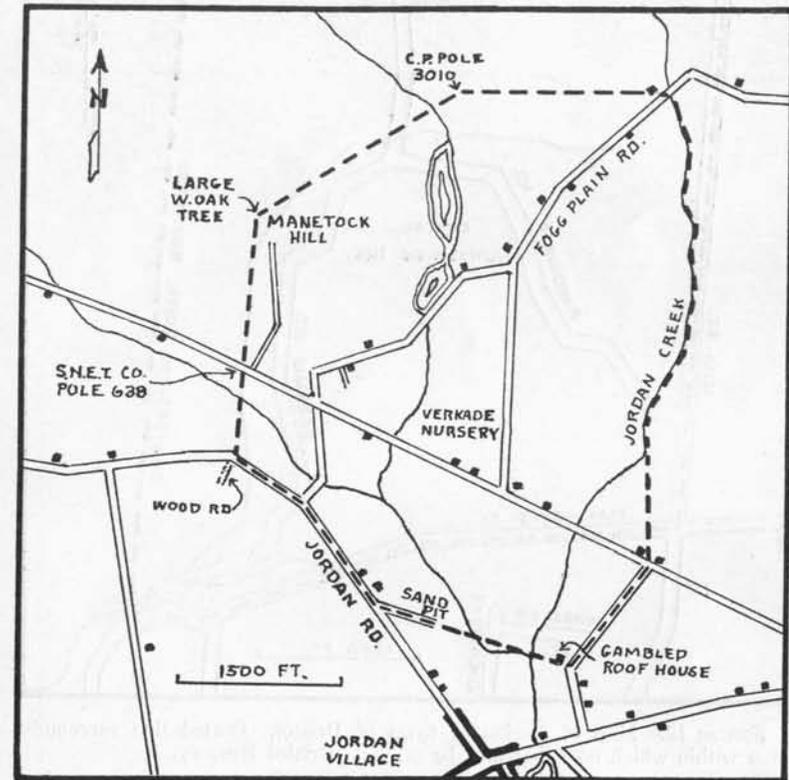


FIGURE 11. Map of section of town of Waterford. Dotted line surrounds area within which no *Ribes* may be grown. Verkade's Nursery.

EUROPEAN BLACK CURRANTS BANNED

On July 1, 1929, a European black currant law became effective outlawing this species of currant in Connecticut. It will be found in Chapter 172 of the Public Acts of 1929. The text is as follows:

SECTION 1. Any person who shall grow, plant, propagate, cultivate, sell, transport, or possess any plant, root or cutting of the European black currant, or *Ribes nigrum*, shall be fined not less than five dollars nor more than twenty-five dollars.

SEC. 2. The Director of the Connecticut Agricultural Experiment Station is authorized to seize and destroy any plants, roots or cuttings of said European black currant found in the state.

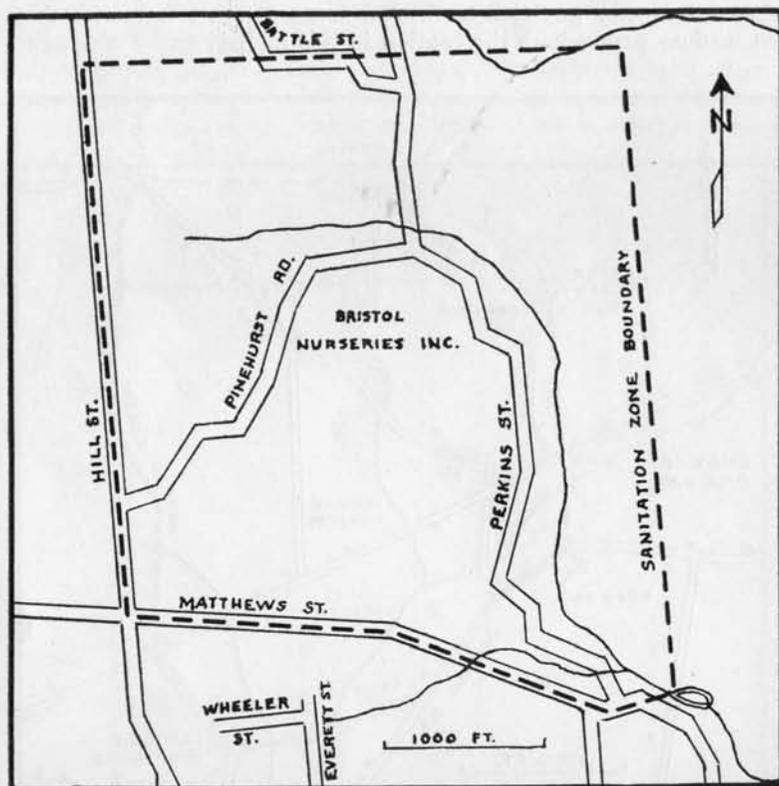


FIGURE 12. Map of section of town of Bristol. Dotted line surrounds area within which no Ribes may be grown. Bristol Nursery.

For information not given in this leaflet concerning the white pine blister rust and its control or the coöperative establishment of Nursery Sanitation Zones, write to:

W. O. FILLEY, Forester, Connecticut Agricultural Experiment Station,
125 Huntington Street, New Haven, Conn.

For information as to quarantines, nursery inspections, and shipping permits, consult:

W. E. BRITTON, State Entomologist, Connecticut Agricultural Experiment Station, 125 Huntington Street, New Haven, Conn.