

Wis. Cons. Bol.
April, 1939
Vol. IV, NO. 4

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WISCONSIN'S SHELTERBELTS GROW LONGER

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When the current tree planting season ends, Wisconsin will have completed five years of its shelterbelt project. Over four million trees will have been planted in lines of "sentinel service", to protect soils that are sandy and easily blown by the winds. In the counties of Wood, Portage, Waupaca, Adams, Waushara, Marquette, Green Lake, Juneau and Iowa—10 in all—the planting of tree belts for wind erosion control has become almost a very part of spring farming operations. It is an epic story, this mass interest in tree belts to shelter farm acres, the generous cooperation of the state in furnishing the trees, and the community enterprise in distributing and planting them, to the end that tree belts might permanently stop the shifting and blasting of sandy soils.

Tree Belts Neglected During Clearing Era

Nearly 50 years ago, when land clearing in these counties was in progress, strong warnings went unheeded. It was then that the late Prof. King of the Wisconsin College of Agriculture urged the saving of tree belts to protect the newly cleared fields. Said he, "Where the clearing is done, it ought certainly, for the present at least, to be done in strips north and south, leaving belts as wind-breaks to stop the drifting, and to make surer a crop of the all-important clover. Certainly the influence of those trees now standing ought to be observed with great care, and the destruction of them which is now going on ought to be stayed." To him it was abund-



Farmers calling for their shelterbelt trees at a town hall in Waushara county.

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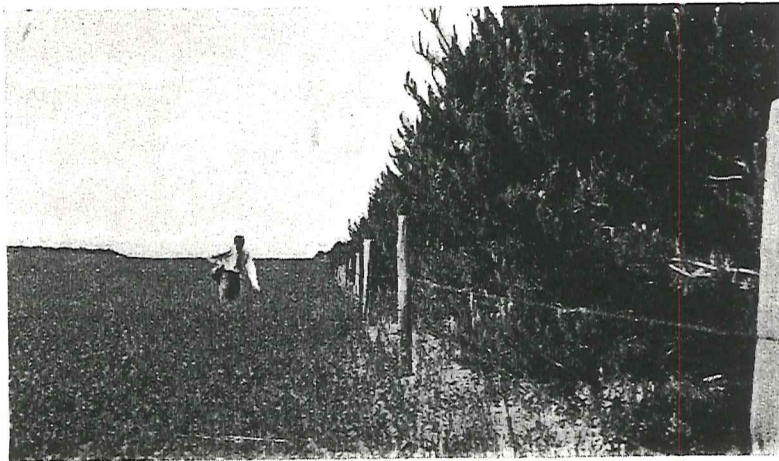
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antly clear that cultivation soon would destroy the veneer, thin layer of humus in the sandy soils of central Wisconsin, and that thereafter only numerous tree belts, obstructing the strong seasonal winds, could prevent the inevitable drifting and blowing of the soil.

How badly those tree belts were needed during the memorable dust storms of May, 1934, those who lived on level, sandy farms were most willing to testify. A few enterprising farmers, fully conscious of the menace of wind erosion damage, had been setting out young shelterbelts for over 10 years previously, using trees obtained from the Conservation department. Young tree belts, only 12 to 15 feet high during the 1934 dust storms, provided most convincing proof of their effectiveness in protecting alfalfa fields and new grain seedings. Those who witnessed these demonstrations needed no more urging to plant trees. Out of these experiences came a united call for Wisconsin's own shelterbelt project.

Planting Survey—Increased Production

It takes more than a season to produce trees large enough to plant for shelterbelts. Two, three, and four year old trees are needed. The Conservation department was equipped to produce the trees, given the necessary time, and more definite information on how many and what kinds of trees would be required over a ten year period to completely plant all of the shelterbelts which would be needed for community-wide wind erosion control. To get this information, a survey was started with funds provided by the State Emergency Relief Administration, under the direction of district forester, Clyde Smith. This survey, now completed for parts or all of over 60 townships in the central counties, determined approxi-



Twelve-year old shelterbelt in Portage county. Alfalfa grows vigorously up to the ends of the limbs.

mately how many trees would be needed for the critical areas, who owned the land, and the extent to which the land owners were willing to cooperate in the project by doing the planting and necessary cultivation thereafter. There was assigned to the field work a surprisingly able group of men and boys, some of whom later enrolled in the short course of the Agricultural College as a result of their enthusiasm for the work. State Emergency Relief Administration officials gave the project most helpful support.

The Conservation department and the College of Agriculture staff members promptly recognized the newly created interest in tree-belt planting. Late in the summer of 1934, Conservation Director MacKenzie, Dean Christensen and extension director Hatch of the College of Agriculture accompanied county agricultural committeemen of Portage, Waushara and Waupaca counties on a tour of some of the older shelterbelts in the region. As a result of this tour, the agricultural committees of the three counties determined that shelterbelt planting was to be a project of first importance in the work programs of their several county agricultural agents; and the Conservation department gave assurance that a sufficient number of transplant trees would be grown over a 10 year period to complete the project. Nursery seeding and transplant operations at the central state nursery were promptly stepped up, so that at present over a million trees annually are produced for the shelterbelt project, and most of these are of the four year old transplant size when shipped out for final planting.

Preparing and Distributing Tree Orders

County agricultural agents and teachers of vocational agriculture make use of their many opportunities every winter in farm meetings



County maintenance truck has to haul away the fertile topsoil of a nearby field which otherwise would have been kept in place by an effective living snow fence.

to obtain tree orders from farmers to plant new shelterbelts, to lengthen old ones, and to make necessary replacements in those already planted. The standard shelterbelt recommended for wind erosion control consists of three rows, and preferably a different species of tree for each row. Jack pine is recommended for the windward row on most soils, Norway pine is most generally used for the center row, and Scotch pine serves best in the leeward row, sometimes white pine is used instead of jack pine in the row most directly exposed to the wind. The rows are eight feet apart and the trees are planted six feet apart in the rows. Tree orders, as they are submitted to the county agents by the farmers, are based on these standards.

Early in March, all orders are sent to the central state nursery. Based on a pre-arranged plan for distribution of individual tree orders, the orders are grouped by distribution centers, there generally being a distribution center for each town. Shipping tags for each tree order are prepared, and a detailed digging and packing schedule for the nursery foreman is arranged, based on the field distribution schedule, so that the trees lifted from the beds one day will be the proper number, and of the proper species, for packing and distributing to towns scheduled for the day following.

Within each farm tree order, the different species are tied separately, and are clearly identified. Prompt packing and delivery to town distribution centers assure freshly dug trees for the farmers.

To distribute over a million trees to approximately 2,000 farmers in 10 counties within a period of less than two weeks, requires not only a rigid schedule at the nursery, but full cooperation on the part of farmers who obtain the trees. Farmers are notified some days in advance of the exact time and place where they may call for



Visitors to Wisconsin's first living snow fence institute examine a newly planted snow fence along a town road in Waushara county.

their trees. Often as many as seven distribution meetings in a county in a single day are held; and to the credit of the farmers cooperating in this project, it must be said they have been invariably prompt in calling for their trees.

Trucks are used to transport trees from the nursery to the distribution centers. Although the trees are given to the farmers for shelterbelt planting, the packing and trucking is an extra service, for which the farmers pay at the rate of five cents per hundred trees delivered. An effort is made to select distribution centers at farms where a shelterbelt is to be planted, or where one has been planted, and replacements or an enlargement is to be made. This makes it possible to show, by means of a planting demonstration under typical field conditions, how a tree should be planted, the correct spacing and distribution of species, and the care which should be given to the shelterbelt after planting. Farmers obtaining trees for shelterbelts sign an agreement with the Conservation department that the trees will be promptly planted, and that they will be given all reasonable protection against destruction by fire, livestock, or weeds due to lack of cultivation.

A Changing Landscape in Progress

In spite of recurrent summer droughts, and a 10-day period of searing heat in July of 1936 which took an enormous toll of young shelterbelt trees, great progress is now evident. Even the most casual observer, driving the main roads or the by-roads of the central counties with the snow something less than knee-deep, has had his attention drawn to the contrasting rows of deep green, just visible above the winter crust of snow. They are marking the permanent boundaries of fields, as well as of farms. Not a few will ultimately serve to replace sagging fence lines, for "jacketed" pine trees make excellent living posts, and the board jacket, to which the wire is stapled, protects the growing trees.

The record of tree distribution by years from the state nursery for shelterbelt planting is as follows:

1935, Spring	278,000
Fall	123,000
1936	557,000
1937	872,000
1938	1,130,000
1939 (estimated)	1,270,000
Total	4,230,000

In the late summer of 1938 District Forester Clyde Smith examined 260 farm shelterbelts in five counties, and these were believed to be a fair sample of results for the region as a whole. His survey showed that average survival during the growing season of 1938 was higher than for any season since 1934. Practically all trees planted in 1938 showed a survival of from 90 to 100 percent.