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Article Summary: Editor Richard Lowitt provides introduction to two 1939 articles focused on the Nebraska scene: "A Plea for Great Plains Forestry" prepared by three faculty members of the University of Nebraska and "Tree Planting in The Great Plains" prepared for newspaper publication by US Senator George W Norris.

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Photographs / Images: 1940 photo of man at shelterbelt marker between Oakdale and Tilden, Nebraska; Professor George E Condra, University of Nebraska, 1897

SHELTERBELTS IN NEBRASKA

Edited by Richard Lowitt

INTRODUCTION

By the spring of 1937, the devastating effect of the Great Depression had combined with drouth and dust storm to force thousands of settlers from their farms and to send swirling away millions of tons of top soil from the Great Plains region. Congress stepped in with its Norris-Doxey Bill—or the Cooperative Farm Forestry Act. Although the term “shelterbelt” was not mentioned in the act, its terms were pervasive enough to allow for the planting of windbreaks on farms throughout the plains states. While Congress refused to provide a specific allocation for this purpose, annual funds were made available for this purpose to the Department of Agriculture by the WPA (Works Progress Administration, a relief agency). By 1939 when the following articles were prepared, a start had been made toward tree planting on the Plains. As both articles indicate, this program had antecedents that preceded the legislative enactment, which merely helped bring the poignant situation prevailing in the western states once again to the attention of Congress.

Opposition to the Cooperative Farm Forestry Act was strong enough to prevent direct annual appropriations for the purposes provided in the provisions of the law. It was most evident in the House of Representatives and was prompted by the lobbying of nursery men who envisioned tree planting by the government as destructive of their business. George W. Norris, among others, pointed out that such would not be the case. No trees planted by the Forest Service could be used for ornamental or decorative

purposes. In no way would the government interfere with the legitimate trade of any nursery man. And if a specific and regular allocation of funds allowed for a marked expansion of the program, many of the trees would have to be contracted for with nursery men who could raise them from seedlings over a period of years. Moreover, the federal program promised to make people all over the United States forestry-minded and thus would enhance the demand for trees.¹

Both articles presented here focus on the Nebraska scene. "A Plea for Great Plains Forestry" was prepared by three distinguished faculty members of the University of Nebraska, while "Tree Planting in The Great Plains" was written for newspaper publication by Nebraska's senior United States senator. Both appeared in 1939 and together they provide a close to comprehensive picture of an important aspect of the New Deal as it affected Nebraska. They are presented in the order in which they appeared in 1939. Copies of both items are included in the George W. Norris Papers in the Library of Congress.²

TREE PLANTING IN THE GREAT PLAINS

This article was published in the *Washington Sunday Star*, June 25, 1939,
under the by-line of
U.S. Senator George W. Norris (R-Nebraska)

In spite of the skepticism which greeted the first large-scale planting of tree windbreaks in the Great Plains, the trees-for-the-prairies idea already has thoroughly demonstrated its soundness and value. The 1939 spring tree planting season is completed—another step taken to make the agricultural industry of that region more secure and stable by the systematic establishment of protective tree strips. So it is a good time to look ahead. I try to look ahead not only as a resident of the prairie country but as a citizen of the United States. And anyone who looks forward from that two-fold standpoint cannot but see one thing clear and unmistakable: Not only the prairie States, but the entire United States needs, and needs now, a permanent Federal program for the establishment of farm windbreaks in the Great Plains.

For the past five years, that is, since March, 1935, the Forest Service of the Department of Agriculture has cooperated with



Unidentified man beside farm shelterbelt marker between Oakdale and Tilden, Nebraska, June 16, 1940.

prairie farmers in planting protective strips of trees at right angles to prevailing winds on the wheat, corn, and cotton farms of the Dakotas, Nebraska, Kansas, Oklahoma, and northern Texas. The work was initiated under executive order of the President.³ Congress provided covering legislation in the Norris-Doxey Cooperative Farm Forestry [Act] of 1937: The work has been financed wholly from relief funds, and labor has been certified from W.P.A. rolls. On the floor of the Senate I have called this wonderful work, vitally important to the future of the nation. I call it so again. Let me set down, briefly, the story.

The record shows that up to now the Prairie States Forestry project has cooperated with farmers in setting out 11,000 miles of field windbreaks on over 20,000 farms in "The Heart of America," in the "Bread Basket of the Nation." In these miles of windbreaks, there have been planted nearly 127,000,000 trees, some of which in only four growing seasons already have attained the surprising height of 35 feet. Already they are beginning to help conserve soil and moisture and to protect crops and

livestock from the hot, scorching winds of the prairie summer, and snow-driving blizzards of the plains winter. As these trees now planted grow in height they will beneficially affect about 3 million acres of adjacent farm land. The cost to the Federal government so far for its share of the cooperative effort has been only about \$9,250,000.

I know from personal experience among the farms and farmers of Nebraska what these trees mean for the preservation—in truth, the salvation of the country—and its continuance as the granary of America. But I can readily imagine readers who do not know that country, who have not thought about the great plains and their problems, thinking, “Eleven thousand miles of trees, 127,000,000 trees, 20,000 farms: That’s a lot of farms and trees. What do they want out there, anyway?”

For that reason, let me put over the moment the question of why tree windbreaks are vital to the plains region as the bread-basket of America, to the establishment of comfortable living standards and homes for thousands of farmers upon whose produce the nation depends, and therefore to the proper balance of the nation’s economy. And also what the tree strips already have done for the plains and the people in this space of five years, and how they have done it. Suffice it at this point that I merely echo the often expressed conviction of honest and sincere plainmen that the tree windbreaks “are changing the face of America.”

The fact is, that what has been done is not a tenth of what remains to be done. There are in the prairie States around 180,000 more farms on which there is critical need for this sort of planting and, I believe, before long it must be carried on. On these 180,000 farms, the soil, the rainfall, and climatic factors make it possible to grow trees without present knowledge and experience. There are some 300,000 additional farms which would be improved through the establishment of tree windbreaks, but where the problem of tree-growing is much more difficult, if not impossible. We should, however, as sound Americans looking toward the long future of our country and our children, not only provide for a Federal program to cooperatively protect these 180,000 farms, but we should study the problem presented by these other areas to determine the feasibility of

developing techniques by which trees may later be established on at least a part of those 300,000 additional farms.

Let us look now at the prairie States themselves, in order to see more clearly what a beneficial and essential thing these tree windbreaks are. The prairie States present a paradox. Their soil is some of the best this side of Egypt. But from earliest times the region has been scourged with winds and years of drouth. In this soil there lies a Paradise—but we must conquer the winds before we can profit from it. And the last five years have proved that field windbreaks are an important part of the answer. They checkmate the winds on adjacent lands. They help preserve the crops and the soil. And they make prairie farms better places on which to live.

We are not without precedent for this situation. China once had a similar potential paradise in the Gobi desert. Scientists say its fertile soil supported millions of people, and their farms and cities. But there too were the winds, always a burden, but every few years coming in blasting and devouring [with] force and frequency as in our recent drouth. Hot, avid for moisture, in these years they dried and burned the crops so that nothing grew; they scoured and blew away the fertile top soil. Each time drouth came the people went "through the wringer," as we say; and more and more people were driven out. Today, the Gobi region is as bare as the back of your hand, the topsoil is gone, nothing grows, nothing can live from or upon it. The land is dead. The Chinese did not think of windbreaks. At any rate, they never established them.

The recent dust bowl drouth, which we all remember, was a great catastrophe; it was, however, simply an intensification of what the winds do to the treeless plains, in some degree, year in, year out. Laden with soil scooped from dry dusty land, they make the shingles creep and shiver on the roof, they scour paint from the fenders of automobiles until they shine like mirrors. They darken and obscure the sun at midday. They blow seeds out of the ground; they suck up moisture so that crops dry up and wither on the stalk; the kernels of wheat do not fill. They blow the soil like snow against fences, houses, or other obstacles; in extreme instances, they bury them. They carry soil for miles, dropping it like rain on cities and other lands; there is evidence that in the drouth years soil from the plains was blown far into the Atlantic. And they leave the land bare and unprotected by

vegetation so that the rains wash it into the tributaries of the Mississippi. In the same way, they sweep the snow from the fields, so that it cannot melt and restore moisture evenly to the lands—moisture which crops need and must have in order to grow.

The windbreaks check the force of the winds so that they cannot so easily scoop and swirl the soil into the clouds; so that they cannot whisk the snow from the fields, into wasteland gullies, or onto road ditches. In this way, they help preserve the moisture in the soil so that crops can grow. In other words, they insure for the crop a greater quantity of snow and moisture, and as every plains dweller knows, an ample blanket of snow, evenly distributed always has meant a good crop. Likewise, the windbreaks prevent the hot west and southwest winds of summer from sucking up the moisture so rapidly from crops growing beside them. The Forest Service tells me that in general a mile of windbreak, that is, about fourteen acres of trees, will protect crops upon about 20 times that area, or 280 acres.

No single instance makes this more clear, I think, than the story of Mr. J. J. Lydick, who lives near Blair, Nebraska. The story begins about 1910 in the days when it was generally believed that trees could not be grown in the prairie country, when deeply religious men said that God never intended trees should grow upon those plains. Mr. Lydick was not well; the doctors told him that if he wanted to live a normal span, he should go to pine tree country. But he had his farm, and he was in love with a beautiful girl, and he did not want to go. In his dilemma, he decided that since he could not go to the pines, he would bring the pines to his farm. He planted belts of trees across his quarter-section of land, composed of rows of blue spruce, white fir, Austrian pines, and cottonwoods. Today, many of those trees are well over 40 feet tall, about their feet are others, as in a small forest. Mr. Lydick is a healthy man—and when the State of Nebraska wanted trees for the grounds of its new capital it went to him for some of them, because he had the best readily available.

But the point of the story is this: In every one of the years of the great drouth, the man of whom I speak raised a crop upon his farm. He raised a crop on both sides of his tree strips in a year that was one of the driest the West ever knew, when hardly a single green thing was produced elsewhere in that part of the

State of Nebraska. In that year, many of the scattered trees in Nebraska died, but in the forest-like grove which the Lydick plantings had become, not one tree died. He himself explained to me why he was able to raise crops in that trying time, when all around farmers were going bankrupt and being driven from their homesteads. He said that in winter the winds blew the snow against the trees and that it settled through the trees and over them so that the flakes fell gently and evenly in the lee of the trees. He said that in summer the hot winds would sweep to the tree strips and there be deflected upward, so that on the other side there was relative calm and shade and cool. Thus, when the crop-growing season was at hand, there was moisture in the land on both sides, from the snow which melted and seeped in on one side, and because the hot winds could not get in and dry up the ground and the crops so quickly on the other. That is why he raised crops on both sides of his trees in the driest year in the record of the great West.

That is why, too, the farmers of the plains States want field windbreaks on their farms. The Forest Service has long waiting lists of applicants for government cooperation in planting trees on their farms. The experience of Mr. Lydick is not the lone proof and demonstration of the vital necessity of field windbreaks in that country. Today, on farms where tree strips were planted in 1935 and 1936, there are trees up to 35 feet tall, trees now protecting crops and soil and benefiting the social fabric of life on the Great Plains, the welfare of which is so important and so vital to the welfare of this nation. You can ride casually through any part of the country where the tree planters have been—and where the new trees have had two or three years in which to grow—and farmers will show you what tree windbreaks are doing. These new tree strips are still young, but older belts planted years ago by far-sighted farmers show what they will do when they have reached their full stature. Here, from the edge of a field windbreak stretches a fine level field planted with rye. For two or three hundred feet the rye is breast high and healthy, and beyond the sphere of influence of the windbreak, it is stunted and dry and dying. On many farms, you may see comparative conditions—two fields, same soil, same crop, same cultivation, same climate, same owner, one protected by trees and one unprotected. Within the area protected by the trees will be good crops; on the adjoining field will be parched and withered stalks.

Nor is that all. For the first time, in many sections, fruit trees and strawberries are growing today under the protection of windbreaks; while game, song, and insectivorous birds that help to reduce insect damage and make a country more attractive and comfortable, are nesting and increasing. Watermelons can again be grown in some places where it had not been possible to produce them because of excessive soil blowing. And housewives and little children picnic—now—in these saving groves.

Very close to my heart and to my hopes for the country are the trees planted in the plains. I have watched them grow year by year. In all that time, I have found only one source of opposition, other than that based on ignorance of the true situation, to continuance of this prairie tree-planting program. That opposition comes, I understand, from some nursery men who have trees to sell. I understand that opposition; I understand that we all have to live; but I think it is short-sighted opposition. In the first place, the present plan for providing windbreaks is cooperative and of minimum cost to the farmer: He provides the land, and fence material and agrees to cultivate the trees. The Forest Service furnishes the trees, plants them, and advises on how to get best results with them through the years. And I believe—indeed, I know, that very few farmers of the plains could afford, especially with the debt burden from the drouth, to put in windbreaks on a regular commercial basis, paying for trees, the labor and so on. In other words, there is only a limited regular commercial market for forest tree nursery products in the plains area. In the second place, let tree strips be started throughout that country and there will be a market for trees from the private nurseries such as never existed before. The plains already are becoming tree conscious; they will be ever more grateful to, and desirous of, trees. And this feeling cannot but lead them to plant more and more ornamental trees and shrubs about their homes, to plant fruit trees and bushes in the lee of their windbreaks. Surely, we all can see the soundness of that prospect. We need, then, a permanent Federal tree planting program as a bridge to a richer and better plains country. We need it as an insurance of our national grain food supply. I believe the nursery men will see such a program as a bridge to a bigger market and better business than they have ever had. Everyone interested—the President, the Department of Agriculture, the Forest Service, the farmers themselves, the

supporters of such a program in the Congress—have been and will be interested in helping to develop this market that lies beyond the bridge to the nursery men of the plains.

One thing more. I am a resident of a prairie State and it may be that in all this I have seemed to speak only as a plainsman. But aside from the food question this is a national problem which already has burdened other communities from coast to coast. When the drouth drove thousands of farmers from the great plains, where did they go? They went to other farm communities seeking jobs, they went to the cities; thousands of them went to California. Thousands of them migrated with their families, to the Northwest States of Washington and Oregon. They added to the relief roles everywhere. More rainfall on the plains last year and the year before, and the increased planting of field windbreaks, have brought better prospects to the prairie States farming communities. I understand some of the people who were driven out have begun migrating back. I hope they all do come back, that they are all able to get back. But let me ask this: When they are back, and the next dry years fall upon the plains, are they to be driven forth again—these hard working, sound people—to become again homeless wanderers in our streets and before our door step? A permanent Federal program of tree windbreak planting and other measures of sound land use will go far toward the stabilization of farming and home life in this vitally important agricultural region.

A PLEA FOR GREAT PLAINS FORESTRY

This paper was presented to the Congressional Joint Committee
on Forestry, December 19, 1939, in Madison, Wisconsin
over the signatures of
George E. Condra, director, Conservation and Survey Division,
University of Nebraska, Lincoln
W. H. Brokaw, director, Agricultural Extension
University of Nebraska, Lincoln
M. B. Jenkins, director, Forestry Research and Survey Division
University of Nebraska, Lincoln

Much has been said and written of late years both for and against the attempt to grow trees in the area now known as the "Great Plains." No doubt much damage has been done the cause of tree planting on the Plains by extravagant statements of

enthusiasts on the one hand, and critical statements displaying gross ignorance or open disregard for fact on the other. But be all this as it may, the fact still remains that some trees have been growing naturally in most parts of the region for centuries, and if heed is given to species adaptability they may be successfully grown in difficult sites by man when care and protection are given them. As an example we need only point to the 15,000 acres of conifer forest which has been planted near Halsey in the Sandhills of Nebraska. Generally, trees may be safely planted where cultivated crops are grown if given equal care and protection. These factors were understood and pointed out by such early United States foresters as Dr. B. E. Fernow and N. H. Egleston who advocated the planting of crop windbreaks on the Plains as early as 1890. Dr. Fernow gave emphasis to the fact that in a sense "the forest creates the conditions of its own existence," and stressed the point that if crop agriculture is to be made successful in most areas of the region, tree belts should be established for field protection against wind damage and rapid soil moisture evaporation.

The Great Plains region, extending from about the 97th meridian to the foothills of the Rocky Mountains and 1,200 miles from central Texas to Canada, embraces nearly one-fifth of the area of the United States exclusive of Alaska. Inhabited by nearly 9 million people, the source of almost half of the agricultural food products consumed by the American people, and one of the great markets for manufactured goods, it is an essential economic unit whose fortunes bear strongly on the stability of the nation's industrial areas.

The predominantly flat surface of the Plains rises gently but steadily from east to west, and inversely precipitation tapers off from amounts well above the minimum needed for tree growth to less than 14 inches a year at various places on the western table lands. Climate ranges from subtropical with long growing seasons in the south to rigorous with long winters in North Dakota. The great variety of soils, ranging from very tight to sandy, are distributed throughout the region in crazy quilt fashion. Nature had originally established grasses to trap winter snows, retard runoff, and combat the effects of the high summer temperatures, low humidity, strong winds, and rapid evaporation of soil moisture which is the rule in the region.

High winds and severe storms are the basic causes of the ills



Professor George E. Condra, University of Nebraska, 1897.

that afflict agriculture on the Plains, and which the recent drouth period has only accentuated. When the sods were first turned over, the soil was extremely rich in organic matter so that precipitation percolated readily through the upper layer to be stored in the subsoil, and for the first few decades crops, trees, and other vegetation suffered much less severely from drouthy periods than they do now. Winds and storms, however, have progressively removed organic matter and as a consequence water runoff and evaporation of soil moisture have increased proportionately with the result that the soil is drier and more easily affected by wind than formerly, and hot winds fire crops more frequently.

Wind desiccation and destruction of the soil is still progressing, and ominous warnings already have been served that in many areas successful agriculture cannot be continued unless remedial steps are taken. Scattered over the Plains are many areas of sandy soil, once fairly rich in organic matter, whose loose texture enables ready absorption of moisture with little evaporation, and therefore at first there was slight fluctuation in crops from year to year. Such soils, however, suffer severely after only a few years' exposure to the winds which remove the humus and leave the coarse abrasive particles as material for destruction of nearby fertile fields and sandblasting of young crops. Sandblasting presents a particularly vexing problem on well watered lands as well as on dry areas. On the western high plains where soils are generally fine in texture, severe damage has resulted from soil-drifting as in the "dust bowl," exposure even of bedrock at other places, and general dissipation of the soil humus. All exposed land has suffered, the degree of damage varying somewhat with the texture of the soil. Lands generally have been so universally tilled or overgrazed that natural wildlife cover has about disappeared causing depletion of insectivorous and game birds almost to extinction in numerous districts with consequent increasing occurrence of grasshopper and other insect scourges.

Regardless of favorable crop conditions, a barren land is not attractive to man, and it has been learned on the Plains that where winds blow unchecked, homes are less comfortable, feeding of livestock requires greater quantities of grain and roughage, and good gardens, orchards, and small fruits, upon

which a "live at home" policy depends, cannot be grown successfully.

During the early settlement of the Plains, tree planting reached the largest proportions ever known anywhere, and under the leadership of eminent early agriculturists such as Governor Robert W. Furnas and J. Sterling Morton, of Nebraska, who, visualizing what might happen if the soils remained continuously exposed to the winds, recommended the planting of great shelterbelts across the Plains to conserve soil and soil moisture and reduce damage to crops resulting from direct blasts of the winds. Stimulated by the Timber Claim Act and State bounties these plantings reached their peak in the 1880's. However most of them were made for woodlots and farmstead protection rather than to aid agricultural crops. Because of mistakes in selecting species and sites, and lack of an understanding by the farmers of the fundamentals of forestry, many of those plantings failed, only a few comparatively persisting down to the present time. It is in the lee of those remaining plantings where farmers have raised fair crops during our worst drouth years, that we find the examples which demonstrate that forestry is an essential agricultural practice on the Plains.

Much of the native timber and many of the planted groves have failed because of excessive grazing which was not understood by farmers to be harmful until it was too late. Recent surveys have shown, also, that tree losses during the late drouth have been less than half as heavy where the timberlands were not overgrazed. The theory of unlimited timber resource was formerly prevalent in the Nation, and farmers generally did not understand the principles of sustained yield and selective cutting, with the result that many native woodlands have been seriously depleted by unscrupulous use of the ax. Neither did they comprehend the value of timber as a perpetual farm income resource, and worthy of continuous care and protection. Many of the planted groves, windbreaks, and hedge rows were removed because they were thought harmful to neighboring crops, and it was only after the removal of these fine early plantings that farmers were given blunt demonstrations of wind damage, which brought a new realization of the tree's place in agriculture.

Because of many failures and the passing of such men of influence as Robert W. Furnas, J. Sterling Morton, and Dr. Chas. E. Bessey, father of the Nebraska National Forest in the

Sandhills, planting interest waned among following generations from the turn of the century until within the past decade. But during the last few years there has been a tremendous surge of interest in tree planting, occasioned no doubt by a staggering loss of trees and a fuller realization by the public that forestry is a necessary part of agriculture. In 1934 because of drouth, dust storms, and widespread destruction of farms, there was general alarm throughout the Great Plains, and demands were made on the Federal Government for aid, which culminated in remedial undertakings by the Forest Service and the Soil Conservation Service in this region.

According to our latest information, the Forest Service since 1935 has assisted farmers in planting 11,000 miles of field shelterbelts on 17,000 farms of the Plains. This has required more than 125 million trees and, according to conservative estimates, will eventually furnish wind protection to more than 2 million acres of crop lands. Many of these plantings were made where residents were convinced that trees could not be grown, but by correlation of species and soil and the application of sound principles of forestry, the Forest Service has shown that trees are successful in such areas. The faster growing species of the shelterbelts planted in 1935 range now up to 35 feet tall in the south and to more than 20 feet in the north, this during the severest drouth period the Plains has known. Many plantings were made in sandy areas which were being ruined by the winds, but already these have stablized the soil, eliminated crop sand-blasting, prevented serious crop damage from hot winds, and brought new courage and hope to farmers who were once ready to quit. Shelterbelts on the finer textured soils are showing equal improvement to adjacent crop lands and increases of crop yields in their lee are very noticeable. Wildlife, especially game and insectivorous birds, is multiplying with great rapidity under the new cover of these plantings, while the older shelterbelts will soon be a continuing source of firewood, fence posts, and other necessary wood products for the farms. In the fields protected by these plantings the fertility of the soil seems to be returning since the light organic matter is no longer blown away.

During about this same period the Soil Conservation Service has operated in the region, and has aided farmers in planting thousands of acres to trees and shrubs in badly eroding gullies

and drainage ways. Those plantings, besides retarding gully erosion and checking damaging floods, are also forming a habitat for wildlife and will soon become continuous woodlots as well as bringing shade, comfort, and beauty to the countryside.

Under the provisions of the Clarke-McNary Act, several million trees are annually distributed for farmstead and feedlot windbreak planting, but they supply only a small part of the needs for such plantings on the Plains. These are the types of plantings to protect homes, gardens, and orchards, and when properly located effect considerable savings for the farmer who feeds livestock. Millions of cattle are still being wintered and fattened in the open, fully exposed to winter winds.

Probably 95 per cent of the rural schoolhouses on the Great Plains have little or no tree protection, whereas every rural school needs a generous planting of carefully selected trees and shrubs around the grounds for the protection of children at play, conservation of fuel in heating the building, and to afford an outdoor classroom where youth will be trained in the knowledge of our important trees and woody shrubs and become familiar with their use in relation to our agricultural, economic, and social problems. Similar plantings are needed about church yards and extensive groves should be established for the purposes of recreation. In some areas even small community forests might prove feasible.

Although the tremendous surge of interest in tree planting of the last five years has brought gratifying progress, the total amount of planting by all agencies, Federal, State and private, is still far short of the immediate needs of the Plains. There are still many thousands of farms upon which shelterbelts and farmstead windbreaks should be planted if any appreciable progress is to be made toward bringing general relief to agriculture in the region.

It is admitted that not all of this vast amount of work can wait to be done by Federal agencies, but because of the diversity of conditions and very immensity of the job, the various state extension departments and state foresters need the aid and cooperation which the facilities, trained technique, and experienced men of our Federal agencies can afford. We realize that eventually these several states must take over a large share of this work, but at the present time our respective states lack the organization, equipment, and ready finance to assume responsibility for a task so urgent and so vast. We further feel,

however, that since our states contribute support to the forestry program in other parts of the United States, and since we have problems of equal importance, and in many respects more complicated and difficult, we are entitled to some permanent cooperation from the Forest Service, which is the recognized Forestry Agency in our country. This, our people ask only in fairness.

The farmers of the Great Plains now look to the Forest Service to continue its assistance and advice in their forestation problems at this time of great need. The repeated drouths of recent years have necessitated restriction of funds for our Agricultural Colleges, and therefore it would have been impossible for extension departments and their foresters even to have attempted an undertaking so large as that which is being carried on by the Forest Service. In Nebraska we feel highly grateful for this fine work, and stand ready not only to lend our every facility for its success, but to cooperate in such a manner that there will be no duplication, friction, nor division of purpose.

The Conservation and Survey Division of the University of Nebraska has carried out extensive surveys relating to soils, water, land use, timber and grass lands, and their proper inter-relationship in the general structure of the State's economic and social well-being. This information and our facilities are always available to all agencies, Federal, State, municipal, and private. We particularly appreciate the work of the Forest Service in our State as evidenced by the unstinted support we have endeavored to lend in a cooperative effort. We are asking this Honorable Committee to look with favor on the continuance of the Forest Service program in our State and if continued pledge our efforts to make this great tree planting program the ultimate product of the combined efforts of our State institutions and agencies cooperating with the Federal government to conserve and restore the soils, water, and agricultural resources of our State.

The Nation is already paying the price for the ills of agriculture on the Great Plains, through the loss of crops, lower purchasing power of farmers, direct relief, migration of populations, disturbance of economic balance, and other unfortunate conditions. These will continue and grow worse unless agriculture in this area is made more stable. We must have a well-planned, adequately coordinated, scientifically sound

forestry program, based on the solution of the problems peculiar to our region.

One pressing need is the establishment of the Great Plains Experiment Station, which was authorized by Congress in 1936. This station has not yet been financed despite repeated appeals. There are 12 forest experiment stations in the United States, their functions primarily being to bring about the greatest economic use of forests for the production of lumber and other wood products, but with relatively little attention being given to afforestation in such regions as the Great Plains where the problems are unique, intricate, and diverse. Great accomplishments have been made in this area by State experiment stations which have been devoted primarily to improvement in grain crops and livestock by means of selection, breeding, and development of strains and species adapted to the area, but in the field of forestry little has been attempted in forest genetics, the search for more dominant strains and development of forest species more suited to this region. Sufficient work has been done elsewhere, however, to indicate that amazing results may be expected through cross-breeding of trees, as one example of the many lines of research which should be explored. Because of the great importance of forestry to Plains' agriculture, the vastness of the area, and the complicated nature of its problems, this great outdoor laboratory is urgently needed as part of the program for shelterbelt, windbreak, range livestock protection, ornamental, recreational, and wildlife plantings. As conceived, such a station would cooperate closely with the State Agricultural Colleges of the Great Plains in working out the problems peculiar to their respective areas, and would become the central clearinghouse for information relating to the arboreal life of the region.

It is readily apparent from the brief resume of the facts in the preceding paragraphs that the program of forestry on the Great Plains is of sufficient importance to this region in particular, and the nation at large, that it must be continued. It must be put on the basis of long-time planning, not possible under the piece-meal procedure of emergency financing which of necessity is predicated on the need for relief employment rather than on the needs of agriculture. The Prairie States Forestry Project of the Forest Service is unstably financed, operating wholly on WPA funds as a work relief project. This project needs stable

financial status so that it can make necessary long-range plans in complete cooperation with the extension departments of our agricultural colleges and thus combine its facilities with our state agencies who are tirelessly striving to serve the best interests of agriculture. On behalf of the Great Plains States we are therefore requesting the continuance of the work of the Forest Service in our region and asking that it be given sufficient allotment of funds to permit it to operate under a sound and efficient policy.

NOTES

1. The essay by Wilmon H. Droze, "The New Deal's Shelterbelt Project, 1934-1942" in Harold M. Hollingsworth and William F. Holmes, editors, *Essays On The New Deal* (Austin, 1969), 23-48, provides a full discussion in historical perspective.

2. A slightly different version of "A Plea for Great Plains Forestry" was found in the files of the Conservation and Survey Division (George Condra, director), University of Nebraska, by Professor Ralph A. Read.

3. The shelterbelt or Prairie States Forestry Project actually was inaugurated July 23, 1934, according to information at the Lincoln, Nebraska, Station.