

HIGHWAYS AND TREES OF THE SOUTH¹

by Rhett S. Bickley

In these comments, I will be dealing primarily with interstate highways. In my interviews with Highway Department Personnel over the Southeast, they pointed out that most of our county and state roads do not have large enough right of ways to allow extensive planting or beautification. Whereas, the super highways have large right-of-ways that can be developed.

Interstate highways were begun as a result of the Interstate Highway Act of 1956. Initially, they were an engineering concept. The engineers said "we can build a road using improved geometric designs, with controlled access, and separation of traffic flow that is safer and faster than anything that's been done. Even though Congress voted funds for the program, funding was tight in the beginning, and the engineers stretched dollars to build the maximum miles of highway. Shortcuts were taken in design and safety features.

But the highways were a success. They were straight and crude, but they provided quick access and quickly won public acceptance. Even though the highways were safer than previous designs with the high volume of traffic, and at the faster speeds, the number of severe accidents steadily increased.

The public had enthusiastically bought the idea of the interstate highway, but now (1967-68) there was a need to make the highways safer, and along with making them more safe, was the desire to make them more beautiful.

Since then, there have been continuous efforts by citizens, garden clubs, civic clubs and others to promote and encourage planting and beautification along the highways. However, the programs have met varying success in each of the southern states. Each state has different political pressures and different programs. Anytime we have a period of financial stress, the intangibles like trees and beauty take a back seat to the cold hard facts of maintenance and con-

struction costs. It's always going to be easier to sell tangibles to politicians.

Too, the structures of the highway departments are made of people who have worked up through the ranks. Their background and training is engineering, and they are not trained nor ordinarily appreciative of efforts to plant trees along the highways.

In South Carolina, we have over 760 miles of interstate highway. With an average right-of-way width of 350; we have over 32,000 acres of land that is not producing. Half of this, of course, is committed to the highway, shoulders, and safety features involved, but there is still 15-16,000 acres of land that could be producing timber and/or beauty.

I think that the point of view we would take is that this land should be developed. We cannot afford to leave it idle. The Highway Department has found out in recent years that mowing these vast pastures and keeping them in an intensively managed condition requires enormous sums of money. It was necessary to mow some areas five or six times during the growing season. By planting portions of the right-of-way and allowing part of the area to return to a natural condition, the states have realized a tremendous savings.

As a result of our tree planting efforts in South Carolina (the planting of pine seedlings along the interstate right-of-way) our highway department saves over \$150,000 annually in the mowing of interstate alone.

I would like to discuss briefly some specific uses of the right-of-way. I have mentioned timber production. It would make sense with the tremendous potential for growing trees along the right-of-way to develop specialized crews to cut and utilize the wood. Some of you may have seen a television special several months ago that featured a farmer farming land inside the runway of a large airport in Holland. The land has been reclaimed from the ocean and is too valuable to

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leave idle. We have not reached that point but we still cannot afford for our land to be non-productive. The planning and planting of super highway right-of-ways should also include vista management. It would be terrible to screen off a beautiful view with a solid wall of pine trees.

There are environmental benefits to be gained along the highways, also. Efforts have been made in South Carolina and other states to develop and promote natural areas and the growth of wild flowers. This is a beautiful way to add diversity to the view and to utilize the land. Although these areas attract wildlife to the highways and its dangers, these areas provide habitat that is being rapidly lost.

A zoologist, Dr. Jerome A. Jackson of Mississippi State University has proposed that super highways can be used to enlarge the range of endangered species. He cites that most wildlife species that have become extinct in the last few hundred years have been island species. As habitat changes occurred, the animals that could not adapt had to flee. He proposes that interstates can be used as connecting links between similar habitat so that endangered species can enlarge their range. The endangered redcockaded woodpecker is one such animal that might use the highways in this manner. They have shown a preference for a road or meadow habitat. They also prefer old growth, red-heart pines that can be found along the rights-of-way.

I have been dealing with the positive aspects of tree planting, but there are factors that should make us cautious in our efforts to promote tree-planting along our super highways.

A scarred tree alongside a road seems so insignificant, especially when you see as many damaged trees in housing developments as I do. But, if we will think back to the night at 2:00 in

the morning when the driver left the road either because he fell asleep or was drinking, it's not a pretty thought to imagine the automobile hitting the tree at 80 mph. It's a safe bet that the driver was killed or seriously injured.

The safety of the drivers using our super highways is, of course, a primary consideration in the design and maintenance of the highways. The American Association of State Highway and Transportation Officials in a booklet entitled *Highway Design and Operation* points up the need for wide, clear shoulders in a section entitled "The Forgiving Roadside."

The section discusses shoulder width as it applies to the recovery rate for errant vehicles. It points out that at operating speeds of less than 70 mph and with relatively level shoulders (less than 10% slope), 80% of those vehicles leaving the road out of control will recover safety when the shoulder width is 30 feet. When the shoulder width is reduced to 20 feet, only 65% of the vehicles recover safely. When shoulder width is 40 feet, 87% of the vehicles leaving the road will recover. These figures can not be used as flat standards because other factors are involved; slope, curve, distance to cut or fill and the angle of cut or fill, but the figures do give us reason to consider that the 10 extra feet of shoulder width from 30-40' is a small amount for 7% increase in vehicle recovery.

Gentlemen, as in all aspects of life, we make our decisions based on all the facts we have. It is our purpose to grow more and healthier trees, for all the combined benefits they produce. But we must be aware of the physical and engineering limitations on planting trees in special areas.

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ABSTRACT

Baumgardt, J.P. 1977. **Shrubs that stay small.** *Grounds Maintenance* 12(2): 54, 57.

Fortunately, needle evergreen, broadleaf evergreen, and deciduous shrubs are all available to us today in forms that are of restricted dimension at maturity. You may want to consider these low-growing shrubs for your grounds in order to improve landscape design and to reduce maintenance.