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WHERE THE FOREST MEETS THE ROADSIDE: WHY STATE DEPARTMENTS OF TRANSPORTATION MANAGE FOR GRASSLAND COMMUNITIES

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Abstract: Through a sampling of State highway maintenance practices, this paper explores how over 10 million acres of State highway rights-of-way can be converted to conservation acres. States plant and preserve native grasses and forbs, and hold back forest succession to create clear zones for the safety of highway users. This paper explains the clear zone's importance to the traveling public's safety and the evolution of policy towards the use of native plants, specifically grasslands, in clear zones. Incorporating grassland management to those rights-of-way, can result in additional conservation acres and safe travel.

Where the Forest Meets the Roadside Highway Safety Will Always be the First Consideration

Because highway safety is the number one priority of highway agencies, highway authorities are required to provide a safe and comfortable ride to all highway users. Because safety is job number one, all other practices are influenced. For example, guaranteeing good visibility along the road and at intersections, requires maintenance of low-growing or mowed vegetation. To offer a recovery area for errant vehicles or pull-off zones for mechanical failures, a shoulder and clear zone are maintained free of woody vegetation. To prevent fatalities, obstacles, including trees of 4-inch caliper or greater, are not allowed within 30 feet of the road's edge. All that is done in the name of safety could be achieved by installing native grasses and forbs or grassland communities. They require less maintenance, allow pull-offs, and slow down errant vehicles. Since every State has a naturally occurring grassland community, every State can look to its meadows, prairies, etc. for vegetation models.

Forest edges next to roadsides conflict with safety objectives. When trees grow near the pavement edge they reduce visibility, allow wildlife to intrude, create crash obstacles, shade pavements increasing icy conditions, and fall into traffic lanes during inclement weather events. Trees are considered safety hazards for many reasons. However, the traveling public regards trees near the road as sources of shade, comfort, and beauty. Arching trees that create a shady tunnel effect, such as those on the winding roads of New England, are expected by tourists. Groves of old oaks that represent strength, history, and natural beauty in the Midwest entice travelers along rolling roads through hills and valleys. A mix of pines and palmettos lining roadways in the Southeast evoke memories of past vacations. The aspens, firs and spruce stand out against clear, blue Western skies beckoning travelers upwards or beyond towards the seashore.

In order to maintain practical grassland, especially where the forest edge meets the road, we must manage the grassland vegetation to avoid encroachment of the forest and/or discourage natural, old-field succession of the grassland. The result is highly visible to the highway user. The trimming or removal of any trees along highway systems is likely to evoke complaints. Thus for safety and public acceptance, maintaining grasslands and holding forest succession makes sense. Add the resulting seasonal diversity and color of native wildflowers to the mix and the public discovers another kind of roadside beauty, with forests serving as a backdrop, out of harms way.

Roadside Management History

In 1936, J.M. Bennett wrote the book, *Roadsides, the Front Yard of the Nation.* My observation of roadside history is that the title of this book became an unwritten policy as roadside development became a goal of State highway agencies. Intense roadside maintenance was common (Bennett 1936). The 1950's saw a mow-spray method of vegetation management across the country, which maintained our highway rights-of-way as front-yard looking turfs. Americans came to expect this level of care.

The 1970's brought an end to this fuel-using, air-polluting, labor-intensive, and costly use of highway resources. The energy crunch forced many DOTs to find alternatives that were more holistic, using less resources. An ecological approach began to emerge.

Some twenty years later, in the 1990's, conservation became a "driving" force in roadside care thanks to the continued efforts of each State's DOT and new guidances from the FHWA. It was as if the conservation ideas of 1950-70 were rediscovered. The Executive Memorandum of 1994 called for the increased use of native plants as much as practicable. The EO13112 suggested unprecedented cooperation and communication about weed control. Subsequent guidance recommended the early analysis of weed potential on highway projects through the NEPA analysis. States became increasingly proactive (Harper-Lore 2000).

Research Needed

Much remains to be learned about effective and cost-efficient vegetation management of highway corridors. Further research can teach us how to work with succession and understand how forest communities can be incorporated into solutions that provide safety and conservation values. We need to know how to:

1. Determine the correlation between deerkill and the proximity of the forest to the road's edge.
2. Explore the relationship of roadside mowing practices and large mammal mortality.
3. Define the optimum mowing cycles to preserve safety, yet reduce maintenance costs.
4. Survey highway user expectations and determine what they will accept for safety and conservation goals of roadsides.

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