



Florida Department of Transportation Research
Madison County Energy Conservation Study 2012-2013 Survey of
Roadside Vegetation
PR6365252

The many thousands of miles of roads in Florida's State Highway System (SHS) are flanked by tens of thousands of acres of planted right-of-way and medians. The nature of the plants and soils in the right-of-way is important in helping to maintain the structural integrity of the roadway by preventing erosion, a primary maintenance concern. Maintenance of these planted areas is also intended to create a clear zone for vehicles that leave the road. And of course, a well-kept right-of-way beautifies the roadway.

Typically, the right-of-way is mowed from fence to fence (or tree line to tree line) several times a year. To conserve energy and reduce expense, a pilot study of more limited mowing was begun in 2009 on the most westerly mile of I-10 in Madison County. With the cooperation of Florida Department of Transportation (FDOT) District 2 maintenance personnel, mowing along this stretch was limited to a 10- to 15-foot safety strip along the pavement edge; only in the fall was the right-of-way mowed fence to fence. The project has continued in each year since 2009 and has been accompanied by a series of vegetation surveys, in this project, conducted by OecoHort, LLC, of Tallahassee, Florida.

Surveys were conducted in March and October of 2012 and 2013, before the first safety strip mowing and before the fall fence-to-fence mowing. Each survey documented the presence and approximate extent of desirable, showy native wildflower and grass species and nonnative species, especially those listed as undesirable by FDOT Maintenance Rating Program (MRP) standards. For predominantly occurring species in the unmowed zone, management practices were recommended. Special note was made of species not seen in previous surveys.

In addition, soil characteristics were recorded in fall 2012 and 2013 where *Bidens alba* (Spanish Needles) was abundant. This species is of special concern because FDOT anecdotal evidence had



In this pilot project, the area to the right of the yellow line – the safety strip – was mowed several times a year, and the area to the left was mowed only once a year.

suggested that it caused erosion. However, no erosion was noted in the pilot study, even where *Bidens alba* was dense. The relationship between this species and erosion may be due to soil characteristics. Soil samples were collected at five random locations along the test segment and submitted to an independent testing laboratory for analyses including percent organic matter, pH, and relative sand/silt/clay composition.

The mowing regime used in this pilot project was found to promote increased diversity in less-mowed areas of the right-of-way, compared to the safety strip. Mowing costs were definitely reduced, and there was no indication of any negative impacts on highway operations. In fact, an argument can be made that less mowing means fewer machines on the highway, improving safety for drivers and workers. Finally, the density and variety of roadside flowers was increased, adding to the aesthetic appeal of the roadway.

Mowing the many acres of right-of-way every year represents a substantial expenditure, and mowing a limited portion of the right-of-way means cost savings as well as safety, aesthetic, and ecological benefits.

Project Manager: Jeff Caster, FDOT Environmental Management Office
Principal Investigator: Jeffrey Norcini, OecoHort, LLC
For more information, visit <http://www.dot.state.fl.us/research-center>