

# NEW GUIDE FOR GREEN INDUSTRIES ON WATER CONSERVATION BEST MANAGEMENT PRACTICES

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**Abstract.** To meet Georgia's growing demands for water resources, the focus must be on how to use water more efficiently without sacrificing public health and environmental quality. This paper presents an introduction to and an overview of a new Extension bulletin that provides a comprehensive outline on best management practices (BMPs) for water conservation in landscapes. The new bulletin has been developed by a group of specialists with the Georgia Cooperative Extension Service from several disciplines including horticulture, turfgrass science and engineering. The bulletin has been designed particularly for green industry professionals in Georgia. The manual will be used for educational programs and as a resource for professional landscape managers, contractors, installers, designers and government officials, water purveyors and regulators.

## INTRODUCTION

In Georgia, increasing demand for public water is directly related to increasing populations. From 1950 to 2000, Georgia's population grew by 40%. Another 16% increase is projected by 2010. Unfortunately, from the water supply standpoint, population is not evenly distributed throughout the state. People are moving to urban areas for goods, services, schools and healthcare that urban areas afford. In fact, over half of Georgia's population resides in 12 urban counties, while two-thirds of the population lives in just 40 of the state's 159 counties (Bachtal, 2003).

During the summer months, municipal water use outdoors increases between 30% to 50% as citizens begin using water for outdoor recreational purposes (e.g. swimming pools), utility purposes (e.g. car washing and pressure washing) lawns and landscapes.

Population growth and increased demand for water has resulted in a statewide mandatory outdoor watering schedule. In certain areas of Georgia,

outdoor water use has even been banned for a period of peak water demand during summer months.

To meet Georgia's growing demands for water resources, the focus must be on how to use water more efficiently without sacrificing public health and environmental quality. This paper presents an introduction to a new Extension bulletin that provides a comprehensive outline of best management practices (BMPs) for water conservation in landscapes.

## DESCRIPTION OF BULLETIN

The key factors to achieving water use efficiency in landscapes are proper plant selection and installation, and the use of landscape management practices which accentuate a plant's natural ability to survive, despite a temporary deprivation of resources (e.g. nutrients and water). The purpose of this bulletin is to provide BMPs for landscape design, planting installation, effective use of irrigation systems, and proper turfgrass maintenance. The bulletin can be used by landscape professionals, homeowners, water purveyors, local governments, and state regulatory agencies to improve water use efficiency while maintaining a healthy and attractive landscape. By employing proper techniques discussed in the bulletin, water use in the landscape can be more efficient thereby reducing the amount of water used.

Water conservation is an improvement in water use efficiency, not the temporary response to periodic drought. Landscape water conservation BMPs are practices which integrate plant selection, plant adaptation, irrigation, cultural and management practices and a change in the expectations of plant performance under sub-optimal water availability. The BMPs should reduce water use by landscapes, not just during periods of drought, but throughout the entire growing season. They are designed to be economical, practical, and sustainable while maintaining a healthy, functional

landscape that capitalizes on the environmental benefits of plant systems.

When combined, all the BMPs recommended become an integrated approach to achieve landscape water conservation. Some BMPs in the bulletin can save water independent of the others. However, the optimum water conserving landscape will have a mix of several of the recommended BMPs working together to fit the site specific needs and limitations of a particular landscape.

The bulletin has 7 chapters. The introductory chapter discusses the value of healthy landscapes, the overall water situation that Georgia is facing, general climate information for Georgia and the purpose of the publication.

The second chapter discusses important strategies in the design of a landscape to create a water efficient landscape. The importance of evaluating site characteristics and design principles which effect water use are emphasized.

The next chapter covers critical techniques and methods for installation and maintenance of landscapes that will result in a healthy landscape that maximizes the use of rainfall and minimizes irrigation water needs. Included in the chapter are BMPs on soil preparation, plant installation and important practices for plant establishment. The need for proper management practices that will keep the established landscape healthy and water conserving are also provided.

The fourth chapter focuses on irrigation systems. It gives an overview of BMPs for irrigation system design, installation, management, and maintenance practices. Proper choices of equipment, system layout and maintenance are discussed. Important principles for irrigation management are also explained.

The fifth chapter has information on turfgrasses. In Georgia, turfgrass can do well without intensive irrigation provided the best choice of turfgrass species/cultivars is chosen for the purpose and site. Soil preparation, rootzone modification, proper cultural practices, and management of extrinsic stresses to minimize water requirements in lawns and other large turfgrass areas are explained.

Chapter six is entitled "*Emerging and Existing Technologies.*" This chapter presents techniques and technologies that are currently used and researched for future improvements in water use management for landscapes. The techniques range from visual inspection methods for determining when irrigation is most needed to more technological equipment that can indicate water needs. Using alternative water sources such as rain water harvesting, reclaimed water and gray water use are also discussed.

The seventh chapter reviews the economics of landscape water conservation. A case study of the money savings that can result from some of the BMPs given

earlier is created and an economic analysis is carried out. A logical framework for outdoor water allocation is provided.

Throughout the bulletin, additional Extension publications are cited for further details on the BMPs described. Also, suggested readings on particular topics are given.

## CONCLUSION

This new bulletin is currently published on the Center for Urban Agriculture website ([www.gaurban.org](http://www.gaurban.org)). This bulletin will be used by county agents to provide state of the art information on water conservation BMPs.

## REFERENCES

Bachtel, Douglas C. 2003. *The Georgia County Guide*, 22<sup>nd</sup> edition Center for Agribusiness and Economic Development, College of Agricultural and Environmental Sciences, The University of Georgia. <http://www.agecon.uga.edu/~countyguide> .