Since the advent of agriculture, sites have been predominantly managed in a homogenous, uniform manner (Taylor et al., 2007). Plant growth and yield, however, typically vary significantly across a relatively small area because of the dynamic interactions of climatic, plant, and soil factors. During the past 20 yr, the agriculture industry had focused increasing attention on raising input efficiency and implementing more environmentally conscious practices (Bouma et al., 1999; Sadler et al., 2007; Delgado and Berry, 2008; Bramley, 2009). The concepts of precision agriculture (PA) and, more recently, precision conservation (PC) have been the driving forces behind research geared toward maximizing efficiency and addressing environmental concerns. The fundamental principle of PA is to use geo-referenced sensors and geographic information systems (GIS) to apply inputs (e.g., water, fertilizer, and pesticides) only where, when, and in the amount needed by the plant (Corwin and Lesch, 2005b). Similarly, PC uses spatial assessment and mapping tools and techniques to analyze data to develop management plans that address spatial and temporal variability for sustainable agriculture, rangelands, and natural areas (Delgado and Berry, 2008; Delgado et al., 2008). By integrating multiple layers of information encompassing surface and underground flows, PC aims to enhance conservation practices and the sustainability of natural resources while maintaining yields.

As a corollary of PA, and one that is still in its infancy, the concept of precision turfgrass management (PTM) is gaining momentum as an approach to...