UNIVERSITY OF MARYLAND EXTENSION

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Lesson 1: Geographic Information Systems and Their Use in Nutrient Management

INTRODUCTION

QGIS (formerly known as Quantum GIS) is an Open Source Geographic Information System. It can help streamline mapping for MD Nutrient Management plans as well as provide key information for determining the Phosphorus Site Index and the Phosphorus Management Tool.

WHAT IS "GIS"?

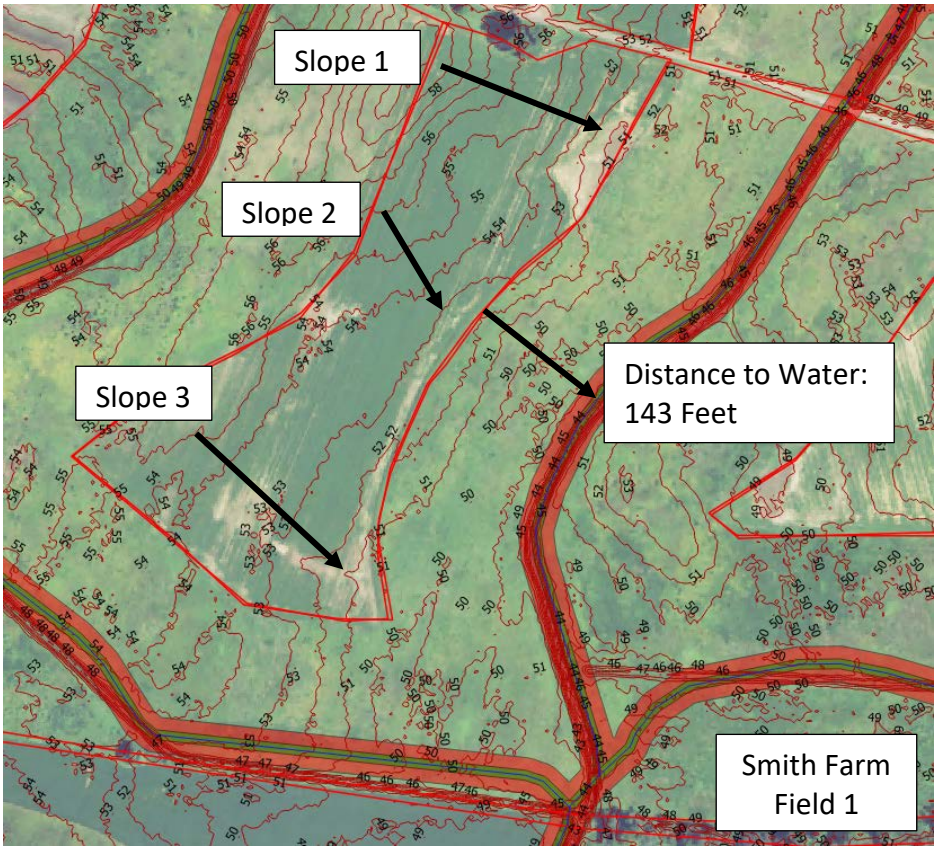
GIS stands for Geographic Information System. It is designed to capture, store, manipulate, analyze, manage, and present all types of geographically referenced data. It is used in many applications for large and small municipalities, the military, commercial businesses and agriculture.

The most well-known and used application is *ArcGIS*. In agriculture, it is used to develop maps for NRCS and FSA offices throughout the country and by conservation districts and NRCS to plan how water will be controlled. An example of an online GIS program is the Web Soil Survey. QGIS (formerly known as Quantum GIS) is an Open Source Program – it comes with the right to download, run, copy, alter, and redistribute the software. This is the version we will use for mapping in the Agricultural Nutrient Management Program.

Aerial Photo:	Roads, Fields, "Blue Line" Streams, and Setback Buffers (10 ft. and 35 ft.) added to the photo
	

GIS programs use layers of data, which when added together provide information for decision making. Above is an example of an aerial photo versus six layers of data added at one time.

Only one additional layer is needed to provide all the information needed to measure, calculate, and document distance to water, average length of slope, and average percent slope: contours.



QGIS will also measure acres for fields that have not had acreage determinations completed by FSA or when FSA fields have been divided due to cropping or irrigation.

A soils layer can also help provide the advisor with a quick overview of the soils in a field.