

LABORATORY 4

SOIL SURVEY REPORTS

I Objective

Become familiar with the scope and use of information in modern soil survey reports.

II Introduction

Soil survey reports contain a wealth of information about the soils of Louisiana. The reports have been prepared through the cooperative efforts of the Natural Resources Conservation Service (formerly, Soil Conservation Service) and the Louisiana Agricultural Experiment Station, School of Plant, Environmental and Soil Sciences.

The soil survey reports contain important information about the climate, agriculture, and soils within each parish. Soils are described, classified, and mapped as specifically as is feasible, and the suitability of each soil for various uses is evaluated. There is also a discussion of influences of geologic conditions and soil formation processes in the newer soil survey reports. Since the modern survey was initiated and the first reports published in the 1950s, the oldest reports are being updated and published again. Information in hardcopy surveys is available electronically, including the Web Soil Survey.

III Procedure

Select a soil survey report from a parish that interests you and examine the contents. Complete the exercises on the worksheet.

Some of these surveys date from the 1950s. The newer surveys (1970s to present) often present more data and more straightforward interpretations than do the older surveys. Nevertheless, most of the exercises can be completed using older surveys.

Soils maps from some of the oldest soil surveys in Louisiana are hanging on the walls of this room. These were published from about 1915 to 1925. Accompanying text is available. Take a moment to flip through these pages and compare soils data and descriptions from nearly a century ago to what is most recently available.

IV Worksheet and Questions

Have in mind a specific tract of land. Identify its general location on the index to map sheets just preceding detailed soil maps (aerial photos) and refer to the general soil map (colored, facing) and accompanying legend to identify the **soil association** of that area.

Go to the description of general soil map units and read the brief description of soils in this association. This includes landscape position, general morphology and use of these soils.

Return to the index to map sheets, note sheet number for map covering specific tract and turn to that detailed soils map. Use landmarks and / or section numbers to locate the particular tract. Note the symbol for the map unit (or predominant map unit) that occurs in this tract and refer back to index to map sheets for the legend naming this map unit.

Go to the detailed description of map units and read description of this map unit. Now use the various tables to answer questions about this map unit.

A *Acreage*

What is the parish-wide acreage of this map unit and what is its fractional contribution to total acreage (see Table Acreage and Proportional Extent of the Soils)?

Map Unit	Acreage	Proportion

B *Agricultural Productivity*

Complete table on **land capability class** and expected yields of crops (see Table –Land Capability and Yields per Acre of Crops and Pastures. In some older surveys land capability classes and expected yields are given in separate tables). Use data for three different crops.

Map Unit	Land Capability Class	Major Limitation	Expected Yields of Crops		
			Crop Type	Crop Type	Crop type

Are there soils in the parish that are likely more productive for the crops listed above?

C Forestry Use

Forestry is big business in Louisiana and throughout the Southeast. Complete table on timber production (see Table Woodland Management and Productivity).

Map Unit	Productivity Index [†]	Major Limitation	Trees Recommended	

Productivity index may be given as an *ordination symbol* for the soil. This is an estimate of maximum expected growth expressed in cubic meters per hectare per year. In some surveys, productivity is given in *site index* for the soil. This is expected height of dominant trees at 50 years.

Are there soils in the parish that are likely more productive for the trees listed above?

D Building Site Development

Perhaps you'd like to develop this tract as a business location or deluxe home site. You'd want a good foundation for structures and driveways. A beautifully landscaped lawn would be nice, too. Any limitations (see Table Building Site Development. In some older surveys you may need to consult Table Interpretation of Engineering Properties)?

Map Unit	Limitation		
	Road Construction	Building Foundations	Landscaping

E Sanitary Facilities

Assume you want to build but the site has no city sewage. You'll need a septic system. What limitations, if any, are there on use of this soil for septic systems (see Table Sanitary Facilities)?

F Wildlife Habitat

Consider the potential for wildlife habitat (see Table Wildlife Habitat). If you wanted to enhance this site for wildlife, is there greater potential for woodland or wetland wildlife habitat?

G Classification

To what series does this soil belong? Give family and higher taxonomic class as well. What is the soil order? See Table Classification of the Soils.

H Profile Description

Go to section on classification of soils. Complete the below table on profile characteristics for the upper three horizons of the soil you are examining.

Horizon	Depth	Texture	Structure