

# 4-H LAND JUDGING



Cooperative Extension Service / The University of Georgia College of Agriculture / Athens



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AN EQUAL OPPORTUNITY EMPLOYER

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C. Wayne Jordan, Director





## Land Judging for 4-H Members

Soils are Georgia's most precious natural resource. Growing plants obtain their support and essential nutrients from the soil. Harvested plants supply us with food, clothing, and housing. It is essential, therefore, that we conserve our soils so future generations can survive.

Through land judging, you will learn what factors make one soil different from another. You will also learn conservation practices necessary to conserve the soil and make maximum use of its potential for producing crops and forage.

### What You Will Learn In Land Judging

1. The different types of soil.
2. Why soils respond differently to the same management practices.
3. How soil properties can affect crop production and soil conservation.
4. Water conservation practices.
5. How to determine the best management practices for a particular soil.
6. How to determine land use by judging soil depth, texture, permeability, slope, surface drainage, and amount of erosion.
7. Skills for managing soil correctly.
8. Why poor soil management can result in accelerated erosion and reduced crop yields.

### What You Should Do

1. First, enroll in the 4-H Land Judging Project.
2. Learn the classes of land in your community.
3. Participate in community and county land judging programs or contests.

### Other Activities

1. Give a soil and water conservation demonstration at school, to your club, civic groups, Home Economics Clubs, Farm Bureau, or other groups.
2. Make a soil conservation or land judging exhibit to show at a fair, school, or club.

### THE SCORE CARD-PART 1

Land judging is done with a score card prepared by soil scientists. The score card suggests standards for each characteristic of the soil. Seven characteristics are listed on the score card. They determine the land capability or land class.

The seven characteristics are:

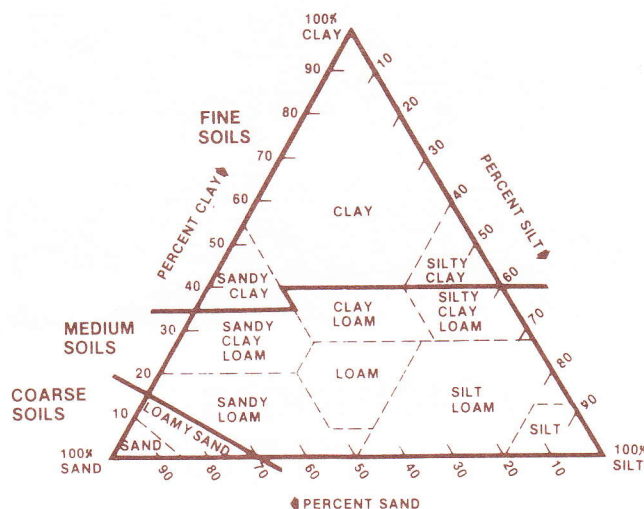
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|--|-------------|
| 1. Topsoil texture                     | 6. Erosion  |
| 2. Topsoil thickness                   | 7. Drainage |
| 3. Effective depth—topsoil and subsoil |             |
| 4. Permeability—subsoil                |             |
| 5. Slope                               |             |



## Topsoil Texture

Texture is determined by the proportion of sand, silt and clay in the topsoil. The largest particles are sand. Clay particles are the smallest. Silt particles are smaller than sand but are larger than clay particles. **Topsoil texture is not determined by size of sand particles.**

## Soil Texture Triangle

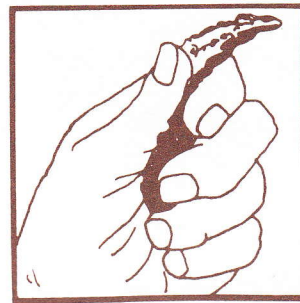


## Fine

Take a moist sample of topsoil and rub it between your fingers. It is a fine (clayey) soil if most of the particles are finer than flour and sticky when wet.



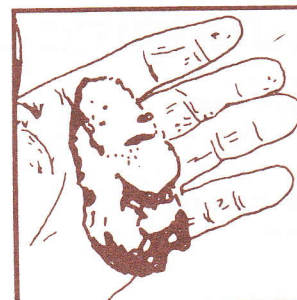
Feels smooth and sticky when wet. Ball shows finger marks. Holds shape.



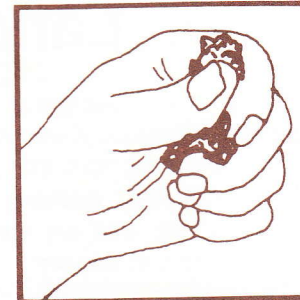
Long, flexible, thin ribbon.

## Coarse

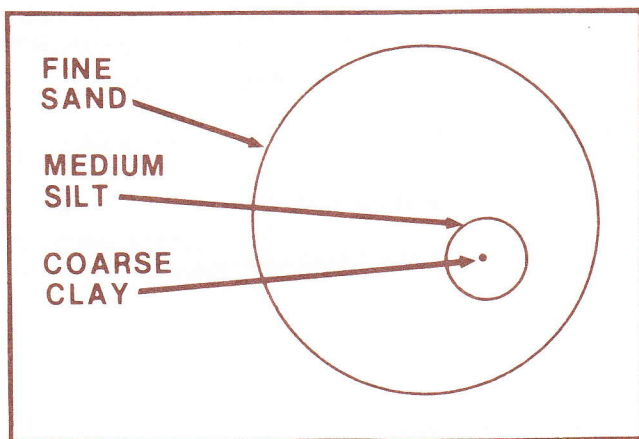
Coarse (sandy) soils are mostly composed of sand particles. Sand is the gritty material which is felt when the soil is rubbed between the fingers. Individual grains can be readily seen or felt.



Feels and sounds gritty. Ball usually breaks in your hand.



Almost no ribbon.



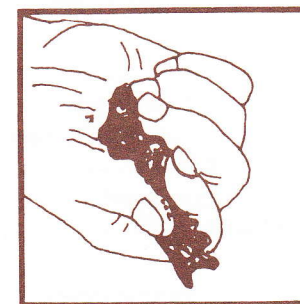
Relative size of sand, silt, and clay particles, enlarged 500 times.

## Medium

A medium-textured soil is between fine and coarse in texture.



Usually smooth. Ball shows some finger marks and holds its shape.

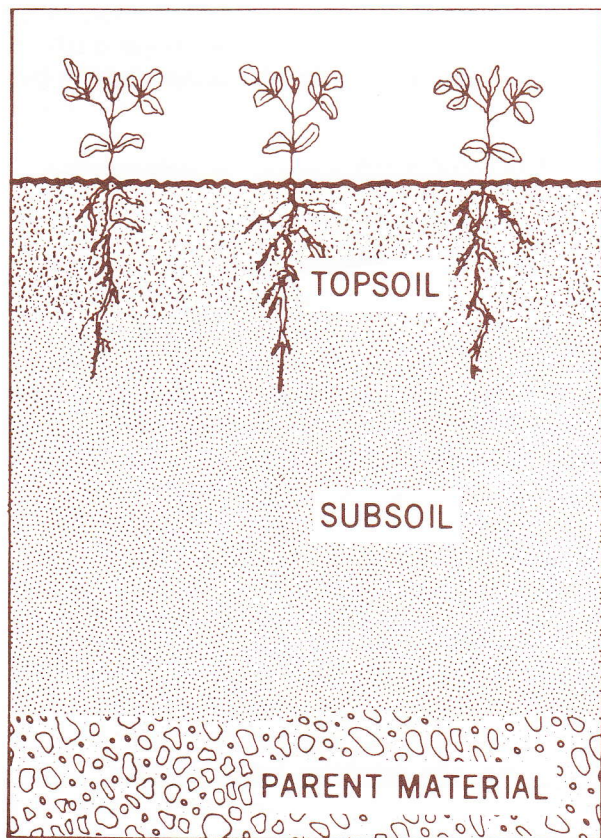


Has short, thick ribbon.



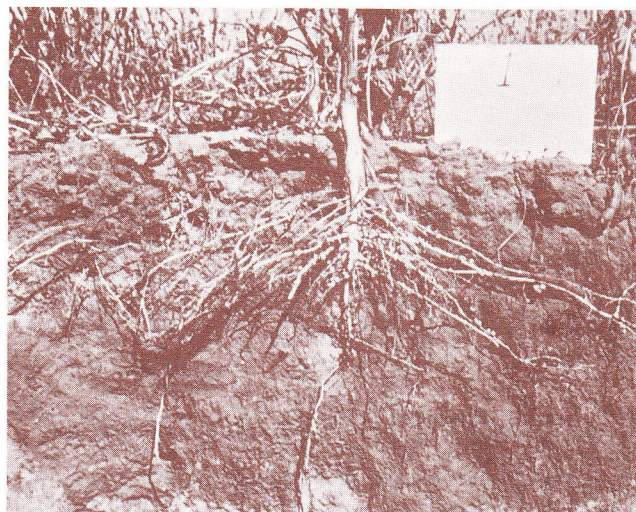
## Typical Soil Profile

A vertical section through the soil is a soil profile. It is divided into three principal layers—topsoil, subsoil and parent material. These layers may differ from one another by either color or texture.



## Effective Depth—Topsoil and Subsoil

Effective depth of topsoil and subsoil is that depth to which plant roots can easily penetrate and absorb water and plant nutrients. Your problem is to determine if there are restrictive layers that prevent plant roots from penetrating the soil. Common restrictive layers are rock layers, dense chert layers, gravel layers, hardpans, claypans, or plow pan layers. Plant roots usually cannot penetrate these layers.



Poor Root Penetration—Shallow Soil.

## Topsoil Thickness

Topsoil is the surface layer of the land measured from the top, or ground level, down to the point of change, or the beginning of the subsoil. Color and texture determine the point of change between topsoil and subsoil. Use your measuring stick carefully. Some soils in the southern half of the state have thick, very thick, or extremely thick sandy topsoil. The plow layer is only in the upper part; the lower part may be 20 to 30 inches thick.

## Thickness Categories

Thin—Less than 5 inches.

Moderately Thick—At least 5, but less than 10 inches.

Thick—At least 10, but less than 20 inches.

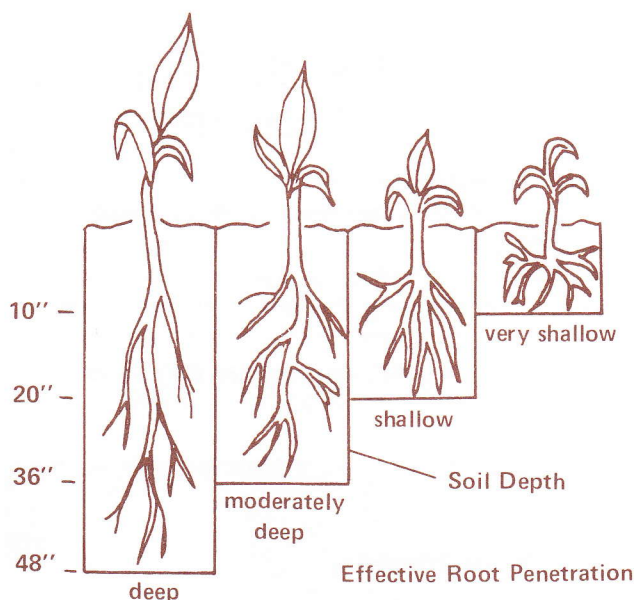
Very Thick—At least 20, but less than 40 inches (coarse texture.)

Extremely Thick—At least 40 inches (coarse texture).



Good Root Penetration—Deep Soil.





## Effective Depth Categories

**Deep**—At least 40 inches.

**Moderately Deep**—At least 20, but less than 40 inches.

**Shallow**—At least 10, but less than 20 inches.

**Very Shallow**—Less than 10 inches.

## Permeability of Subsoil

Permeability is the rate of movement of water and air through the soil. Permeability is important because it determines the kind of crops that can be grown, how soon the soil can be worked, the benefits received from fertilizers, and the absorption of nutrients and water by plants.

The water and air movement in soils is influenced by many factors such as soil texture and structure, degree of soil density, and presence of restrictive layers. One of the best clues to soil, air, and water relationship is the color of the subsoil.

The color of most subsoils is determined by iron compounds. When soils are well aerated, the iron compounds are in an oxidized form, giving the subsoil a red or yellow color. In a poorly aerated soil, the iron compounds will be in a reduced state (lack of oxygen), and the subsoil color will be gray. Mixed or mottled colors of gray, yellow, and brown will frequently appear.

A gray or gray mottled, fine, sticky, clay subsoil has slow permeability. A medium-textured subsoil or a sandy clay subsoil that has bright red or yellow colors should have moderate permeability. A sandy subsoil generally has rapid permeability.

## Slope of Land

Slope refers to the steepness of the area. The slope is important because it has great influence on how fast water runs off a field and the amount of soil erosion that occurs.

Percent slope is determined by estimating the number of feet fall per 100 feet. For example, if the feet fall per 100 feet is 5, the percent slope is 5%.

A formula that may be helpful in determining percent slope is as follows:

$$\frac{\text{Eye Level in feet}}{\text{Number of feet to where your sighting plane intersects slope.}} = \frac{X}{100}$$

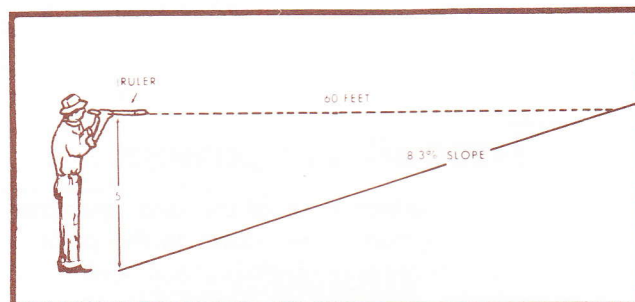
**EXAMPLE:**

Assume that the distance from your eye level to the ground is 5 feet and the sighting plane intersects the slope at a distance of 60 feet.

$$\frac{5}{60} = \frac{X}{100}$$

$$60X = 500$$

$$X = 8.3\% \text{ slope}$$



## Categories for Judging Slope

	South Georgia	North Georgia
Nearly level	0 - 2%	0 - 2%
Very gently sloping	2+ - 5%	2+ - 6%
Gently sloping	5+ - 8%	6+ - 10%
Sloping	8+ - 12%	10+ - 15%
Strongly sloping	12+ - 17%	15+ - 25%
Steep	Above 17%	25+ - 60%
Very Steep	Not applicable	60+ %

Percent slope means feet fall per 100 feet distance.

Accurately judging the percentage of slope comes only with much practice. Using a farm level to determine the feet fall and then pacing off the distance will aid learning to judge slope.



## Erosion

Soil erosion is an expression of the harmful effects of water and wind on the soil. Loss of soil by erosion reduces the productivity of the soil in addition to polluting streams.

The amount and severity of soil erosion can be expressed in four general categories or classes—slight, moderate, severe, very severe. These are described below and can be recognized in the field after limited study.

You will be provided with the original topsoil depth of each station.

### THE EROSION CLASSES ARE:

**Slight**—The topsoil generally is friable and retains much of the dark color of the original surface layer; it is moderately thick or thicker; the subsoil is not exposed unless by unusually deep (10" +) plowing; no gullies are present. Less than 25 percent of the original topsoil has been lost.

**Moderate**—The topsoil may be thin with much of the original surface layer lost; the subsoil is exposed in many places over the field; a few shallow gullies and rills may be present. The color is more nearly that of the subsoil. Between 25 and 75 percent of the original topsoil has been lost.

**Severe**—The surface is mainly exposed subsoil and only remnants of the original surface layer remain; gullies two to three feet deep may be scattered over the field. Seventy-five percent or more of the original topsoil and as much as 25 percent of the subsoil have been lost.

**Very Severe**—Essentially gullied land. Gullies are closely spaced and only remnants of the original soil profile remain between the gullies. Land uses are severely limited. All of the original topsoil and 25 to 75 percent of the subsoil is lost.

## Drainage

Soil drainage is the process whereby excess water is removed from the soil.

For proper plant growth, air and water must move freely in both the surface soil and subsoil. In addition, the soil must be able to hold and store sufficient water for plant growth. However, excess water should drain out. This allows room for air that is needed for root respiration. Respiration furnishes the energy for plants to absorb water and plant nutrients.

Excessively drained soils have coarse, sandy materials more than 60 inches deep.

Well-drained soils generally have red or yellow subsoils that are free of gray mottles down to 30 inches.

Moderately well drained to poorly drained soils have gray mottles ranging from 20 to 30 inches deep in moderately well drained soils to within the top 10 to 20 inches in somewhat poorly drained soils.

Poorly drained soils are usually gray to the surface. The subsoil is always predominately gray.

If there is no air in the soil for a long time, the soil color becomes dull gray. If air is lacking for only a part of each season, the subsoil becomes mottled. That is, it has splotches or mottles which are yellow mixed with dull gray.

Be careful not to confuse lime deposits or spots of disintegrating parent material in an otherwise bright red or yellow subsoil with mottling. As the color changes from dull gray to a mottled color and then to bright red or yellow, internal drainage becomes better.

Drainage on the Georgia placing card is divided into five groups:

**Excessively drained**—Coarse, sandy materials, more than 60 inches deep.

**Well-drained**—No gray mottles in top 30 inches of soil profile.

**Moderately well-drained**—No gray mottles in top 20 inches, but present in 20-30 inch zone.

**Somewhat poorly-drained**—Gray mottles in top 20 inches.

**Poorly-drained**—Soil is usually gray to surface; subsoil is always predominately gray.

## Land Capability Classes

In Georgia 4-H Land Judging, the land class will be determined by the "Guidelines For Selecting Land Capability Classes" on page 8 of the manual. The following list is a summary of the eight land classes which will be considered. A more detailed discussion of land capability classes will be found starting on page 10. A combination of factors which may cause the land class to be raised to a higher number will not be considered.

If a location qualifies for the ideal in each characteristic, it is Class I land. Class I land is very good land from all points of view.

Class II land is good from every standpoint, but certain physical conditions make it not quite as good as Class I.

Class III is moderately good land for cultivation. It is more limited in its use than Class II.

Class IV land is good enough for occasional cultivation under careful management.

Class V land is not subject to erosion, but is poorly drained.

Class VI land is not suited for any cultivation and is limited in use to pasture or trees.

Class VII land has severe limitations that restrict its use to pastures or trees.

Class VIII land is suited only for wildlife or recreational purposes. Stone Mountain is a good example.



# Guidelines For Selecting Land Capability Classes

## SOIL CHARACTERISTICS

## BEST LAND CLASS POSSIBLE

### TOPSOIL TEXTURE

Fine	II
Medium	I
Coarse	I

### TOPSOIL THICKNESS

Thin—Less than 5 inches	II
Moderately Thick—At least 5, but less than 10 inches	I
Thick—At least 10, but less than 20 inches	I
Very Thick—At least 20, but less than 40 inches (Coarse texture).	II
Extremely Thick—At least 40 inches (Coarse texture).	III

### EFFECTIVE DEPTH (TOPSOIL & SUBSOIL)

Deep—At least 40 inches.	I
Moderately Deep—At least 20, but less than 40 inches.	II
Shallow—At least 10, but less than 20 inches.	III
Very Shallow—Less than 10 inches.	IV

### PERMEABILITY OF SUBSOIL

Slow	II
Moderate	I
Rapid	IV

### SLOPE

	South Ga. %	North Ga. %	
Nearly level	0 - 2	0 - 2	I
Very Gently Sloping	2+ - 5	2+ - 6	II
Gently Sloping	5+ - 8	6+ - 10	III
Sloping	8+ - 12	10+ - 15	IV
Strongly Sloping	12+ - 17	15+ - 25	VI
Steep	Above 17	25+ - 60	VII
Very Steep	Not applicable	60 +	VII

### EROSION

None to Slight (75% or more of original topsoil)	I
Moderate (25-75% of original topsoil)	II
Severe (Less than 25% of original topsoil)	III
Very Severe—Gullied Land	VII

### DRAINAGE

Excessively drained—Coarse, sandy materials, more than 60 inches deep.	IV
Well-drained—No gray mottles in top 30 inches of soil profile.	I
Moderately well-drained—No gray mottles in top 20 inches but present in 20-30 inch zone	II
Somewhat poorly-drained—Gray mottles in top 20 inches.	III
Poorly-drained—Soil is usually gray to surface; subsoil is always predominantly gray. (See description of Class V in manual)	IV



# GEORGIA LAND JUDGING PLACING CARD - PART 2

Part II of the Georgia Land Judging Placing Card concerns recommended practices for different land classes at each designated station in the Land Judging Contest. You must decide what practices are needed to conserve soil and water and maintain or improve productivity for the area. The decisions must be made at each station and recorded in the proper column.

Part II is divided into three divisions:

1. **Vegetative**—Contains 13 suggested practices.
2. **Mechanical**—Seven practices numbered 14 through 20.
3. **Lime and Fertilizer**—Numbers 21-26 are lime and fertilizer practices to consider for each site.

The practices needed to conserve soil and water and maintain or improve productivity are to be selected and recorded. In the area contests you will be told how many total practices are needed. You must make the selection. The number of practices in the State Contest will not be provided.

## Vegetative

Check the decisions you made in Part I, particularly land class. Land class is very important when considering land treatments listed in Part II.

Carefully check the requirements for the land class that you may have given to the particular station. If it is Class I, II, III, or IV and you are instructed to use it in rotation, you should check the corresponding numbers in the vegetative group. For instance, number 1 practice should be checked for Class I; number 2 for Class II; number 3 for Class III, and number 4 for Class IV. Remember, if your land class is wrong, this answer will also be in error.

Number 5—"Do not burn crop residue." Should be checked for all rotations.

The incorporation into the soil, rather than burning of crop residues, is a good soil conservation practice. As crop residues are decomposed by soil organisms, they are converted to humus. Humus improves the physical condition and increases the water-holding capacity of the soil.

Number 6—Residue management provides for a protective cover by leaving crop residue of any previous crop as a mulch until land preparation. Number 6 practice should be checked for land Classes I, II, III, and IV when used in rotation, but not when used for pastures or woodland.

Number 7—The application of practices to keep plant growth active over as long a period as possible, to encourage the growth of desirable grasses and legumes while crowding out weeds and inferior grasses. Check for all pastures.

Number 8—Check this practice where you are instructed not to consider plants on the land or where no pasture grasses are present.

Number 9—Check for all rotations and pastures.

Number 10—Check for all pastures.

Number 11—Check for all new forestry areas where no trees are present.

Number 12—Check for established forestry areas.

Number 13—Check only for Class VIII land.

## Mechanical

Mechanical conservation practices should be used when land is used for cultivated crops. Most Class II, III, and IV land, when used for cultivated crops, requires some mechanical conservation practices to divert water runoff and prevent erosion.

Numbers 14, 15, 16, and 17—should be checked on all Class II, III, and IV land used in rotation if the slope is greater than 2% (nearly level). They should not be checked for pastures or forest areas, or for Class I land.

Number 18—Check only for somewhat poorly or poorly drained soils that will be in rotation or pasture.

Number 19—Check control gullies at all stations where gullies (deeper than two feet) are present, except when land use is forestry.

Number 20—This practice should be checked on Class III and IV land to be used for rotation if the slope is greater than 2% (nearly level).

## Lime and Fertilizer

Most plants require an optimum supply of nutrients and a soil pH between 6.0 and 6.5 for healthy, vigorous growth. Georgia soils are inherently acid and low in essential plant nutrients. Therefore, to produce high crop and forage yields, adequate lime and fertilizer must be applied to most Georgia soils. Fertility and lime requirements of a particular farm yield should be determined by soil analysis.

You will be provided with information concerning the soil pH and fertility levels at each station. If the soil pH is below 6.0, number 21 (lime) should be checked. If phosphorus and potassium levels are low or medium, numbers 23 and 24 should be checked. However, if P and K levels are high, do not check numbers 23 and 24. If the soil magnesium level is low, check number 26.

Soil nitrogen levels are generally not determined in soil analysis because it is such a mobile element in the soil. A determination of soil nitrogen at a particular time would not mean much. Number 25 (nitrogen) should be checked for all rotations and pastures with the exception where legumes are to be grown that year, such as soybeans and peanuts.

If manure is available (you will be provided this information), number 22 should be checked for all rotations and pastures.



## Important Points To Remember

On all rotations—Consider numbers 1 through 6, number 9 and numbers 14 through 26.

For pastures—Consider numbers 7 through 10, numbers 18 and 19, and numbers 21 through 26.

For forestry or trees—Consider numbers 11 and 12. Do not consider any other practices.

Class VIII land—Check only number 13.

## DESCRIPTION OF THE LAND CAPABILITY CLASSES

The previous discussion concerned the various hazards that limit the use of land for crop and pasture production. The Soil Conservation Service has designed a system for classifying land according to its best use. This system is called land capability class. It is a scheme for grouping fields or areas with similar hazards. There are eight (I, II, III, IV, V, VI, VII, VIII) land capability classes.

The eight land capability classes can be divided into two broad groups:

- 1) land suited for crop production--Classes I, II, III, IV.
- 2) land suited only for permanent vegetation as pasture or forest--Classes V, VI, VII, VIII.

## The Classes

**Class I.** Class I land is very good land with no hazards and can be used for production of crops. Some possible characteristics for Class I land are:

1. The slope is level or nearly level.
2. Topsoil thickness may be either thick or moderately thick.
3. Erosion is none to slight.
4. The texture of topsoil is coarse or medium.
5. Permeability of the subsoil is moderate.
6. It is well drained and not subject to overflow.
7. The effective depth is deep.

**Class II.** Class II land is also suitable for crop production but certain hazards put it in a higher class. Some possible characteristics for Class II land are:

1. The slope may be either nearly level or very gently sloping. If it is nearly level, factors other than slope cause it to be Class II instead of Class I.
2. The topsoil thickness may be very thick, thick, moderately thick, or thin. If it is very thick or thin, the best possible Class is II.
3. Erosion may be either slight or moderate.
4. Topsoil texture may be coarse, medium or fine. If it is fine, the best possible Class is II.

5. The permeability of the subsoil may be either moderate or slow. If it is slow, it could not be better than Class II.
6. It may be well drained or moderately well drained. If it is moderately well drained, the best class it can be is Class II.
7. The effective depth may be either deep or moderately deep.



Example of Class I land. It is well drained and nearly level with no hazards for crop production.



Example of Class II land. A moderate erosion hazard but other favorable features make this land Class II.

**Class III.** Class III land may be used for crop production if certain practices are followed. It has more hazards than Class II land and its use for crop production is more limited than Class I or II land. Possible characteristics of Class III land are:

1. The slope may be nearly level, very gently sloping, or gently sloping. If it is gently sloping, Classes I and II would be eliminated and it could not be better than Class III.



2. The topsoil thickness may be extremely thick, very thick, thick, moderately thick, or thin. If it is extremely thick, the best possible Class is III.
3. Erosion may be slight, moderate, or severe. Severe could cause it to be Class III, by eliminating Class II and Class I.
4. The topsoil texture may be fine, medium or coarse.
5. The permeability of the subsoil may be moderate or slow.
6. It may be well drained, moderately well drained, or somewhat poorly drained. If it is somewhat poorly drained, it could not be better than Class III.
7. The effective depth of the soil may be deep, moderately deep, or shallow. If the depth is shallow, it could not be better than Class III.



Example of Class III land. Steeper slopes with accompanying erosion hazard make this land Class III. Other soils may be Class III because of seasonal wetness.

**Class IV.** Class IV land may be used for crop production with careful management. Generally, it should be in crop production only one-fourth of the time. In the other years of the rotation, it should be in pasture or hay production. Some possible characteristics for Class IV land are:

1. The slope of the land may be one of many—nearly level, very gently sloping, or sloping. If it is sloping, it could not be better than Class IV land.
2. The topsoil thickness may be extremely thick, very thick, thick, moderately thick, or thin.
3. Erosion may be slight, moderate, or severe.
4. Topsoil texture may be fine, medium or coarse.
5. The permeability of the subsoil may be slow, moderate, or rapid, it could not be better than Class IV.
6. Class IV soils may be excessively drained, well

drained, moderately well drained, somewhat poorly drained, or poorly drained. Excessively drained or poorly drained soils could not be better than Class IV.

7. Class IV soils may be deep, moderately deep, shallow, or very shallow. Very shallow soils could not be better than Class IV.



Example of Class IV land. Steeper slopes and shallow soil put this land at the borderline of cultivatable land. It is suited for limited or occasional cultivation.

**Class V.** This is a special class of soil. It may be identified as Class V if it is very wet to the extent that it has almost insurmountable drainage problems in removing the water. The wet surface, however, may be drained sufficiently for the production of pastures and woodlands.

It is usually not necessary to consider characteristics other than very wet in identifying Class V for the few times that it occurs. Wet Class V land, however, may be nearly level or very gently sloping; moderately thick to thick topsoil; none to slight erosion; medium or coarse texture; slow permeability; and shallow to deep effective depth.

**Class VI.** Class VI land is not suitable for crop production and is limited in its use for pastures and forestry. Hazards such as steep slopes, erosion, or shallow soils which cannot be corrected prevent its use for crop production.

Slope and erosion are the major hazards that affect the land capability of Class VI land. Strongly sloping land would be classified at Class VI land.





Example of Class V Land. This land has no erosion hazard. It is wet, however, and is usually difficult to drain.



Example of Class VI land. Steep slopes and a shallow soil create hazards that make it unsuitable for cultivated crops. It can be used for pastures or woodland.

**Class VII.** Class VII land is not suitable for crop production and has severe limitations for use as pastures or for forestry. It requires extensive conservation practices to control erosion. Very severe erosion and/or slope are the major hazards which control this land capability class. Steep or very steep slopes result in a Class VII classification.

**Class VIII.** Class VIII land is suited only for wildlife or recreation purposes. Usually it is extremely stony, sandy, or wet.



Example of Class VII land. The steepness of the slope of this land makes its use for pastures marginal.



Example of Class VIII land. Suited only for recreation or wildlife.

The Georgia Land Judging Placing Card classifies the eight classes as follows:

#### **Classes I Through IV Are Cultivable**

- Class I— Very good land from all points of view.
- Class II— Good but not quite as good as Class I.
- Class III— Moderately good for cultivation.
- Class IV— Can be cultivated under careful management.

#### **Classes V Through VIII Are Not Cultivable**

- Class V— Very little slope, not subject to erosion—but poorly drained.
- Class VI— Suitable for permanent vegetation.
- Class VII— Severe limitations for permanent vegetation.
- Class VIII— Sandy, wet, or stony, used for wildlife or recreation.



## GEORGIA LAND JUDGING PLACING CARD

Name \_\_\_\_\_

Contestant No. \_\_\_\_\_

County \_\_\_\_\_

Group No. \_\_\_\_\_

Score	Check with X																																		
		<b>TOPSOIL TEXTURE</b> (3 points)	Texture is determined by the proportion of sand, silt and clay in the soil.																																
		Fine (Clayey)	Fine means that the soil contains at least 35% clay.																																
		Medium (Loamy)	Medium is between Coarse and Fine.																																
		Coarse (Sandy)	Coarse means that at least 70% of the soil is sand.																																
		<b>TOPSOIL THICKNESS</b> (3 points)	Topsoil is the surface layer measured down to the point of change, or the beginning of the subsoil.																																
		Thin	Thin--Less than 5 inches.																																
		Moderately Thick	Moderately Thick--at least 5, but less than 10 inches.																																
		Thick	Thick--At least 10, but less than 20 inches.																																
		Very Thick	Very Thick--At least 20, but less than 40 inches (Coarse texture).																																
		Extremely Thick	Extremely Thick--At least 40 inches (Coarse texture).																																
		<b>EFFECTIVE DEPTH</b> (TOPSOIL + SUBSOIL) (3 points)	Effective Depth--soil material which plant roots can penetrate readily.																																
		Deep	Deep--At least 40 inches.																																
		Moderately Deep	Moderately Deep--At least 20, but less than 40 inches.																																
		Shallow	Shallow--At least 10, but less than 20 inches.																																
		Very Shallow	Very Shallow--Less than 10 inches.																																
		<b>PERMEABILITY</b> SUBSOIL (3 points)	Permeability--rate of movement of water or air through the soil. A gray or gray mottled, fine, sticky, clay subsoil has slow permeability. A medium-textured subsoil or a sandy clay subsoil that has bright red or yellow colors should have moderate permeability. A sandy subsoil generally has rapid permeability.																																
		Slow																																	
		Moderate																																	
		Rapid																																	
		<b>SLOPE (3 points)</b>	<table border="0"> <thead> <tr> <th colspan="2">SOUTH GEORGIA</th> <th colspan="2">NORTH GEORGIA</th> </tr> </thead> <tbody> <tr> <td>0 - 2%</td> <td>Nearly Level</td> <td>0 - 2%</td> <td></td> </tr> <tr> <td>2+ - 5%</td> <td>Very Gently Sloping</td> <td>2 - 6%</td> <td></td> </tr> <tr> <td>5+ - 8%</td> <td>Gently Sloping</td> <td>6+ - 10%</td> <td></td> </tr> <tr> <td>8+ - 12%</td> <td>Sloping</td> <td>10+ - 15%</td> <td></td> </tr> <tr> <td>12+ - 17%</td> <td>Strongly Sloping</td> <td>15+ - 25%</td> <td></td> </tr> <tr> <td>above 17%</td> <td>Steep</td> <td>25+ - 60%</td> <td></td> </tr> <tr> <td>Not applicable</td> <td>Very Steep</td> <td>above 60%</td> <td></td> </tr> </tbody> </table>	SOUTH GEORGIA		NORTH GEORGIA		0 - 2%	Nearly Level	0 - 2%		2+ - 5%	Very Gently Sloping	2 - 6%		5+ - 8%	Gently Sloping	6+ - 10%		8+ - 12%	Sloping	10+ - 15%		12+ - 17%	Strongly Sloping	15+ - 25%		above 17%	Steep	25+ - 60%		Not applicable	Very Steep	above 60%	
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		<b>EROSION (3 points)</b>																																	
		None to Slight	Less than 25% of the original topsoil lost.																																
		Moderate	Between 25% to 75% of original topsoil lost.																																
		Severe	More than 75% of original topsoil to 25% subsoil lost.																																
		Very Severe	Gullied land. 100% of the topsoil and 25% to 75% of subsoil lost.																																
		<b>DRAINAGE (2 points)</b>																																	
		Excessively Drained	Coarse, sandy materials, more than 60 inches deep.																																
		Well Drained	No gray mottles in top 30 inches of soil profile.																																
		Moderately Well Drained	No gray mottles in top 20 inches, but present in 20-30 inch zone.																																
		Somewhat Poorly Drained	Gray mottles in top 20 inches.																																
		Poorly Drained	Soil is usually gray to surface; subsoil is always predominately gray.																																
		<b>LAND CAPABILITY</b> (10 points)	CLASSES I THROUGH IV ARE CULTIVATABLE																																
		Class I	Very good land from all points of view.																																
		Class II	Good but not quite as good as Class I.																																
		Class III	Moderately good for cultivation.																																
		Class IV	Can be cultivated under careful management.																																
		Class V	CLASSES V THROUGH VIII ARE NOT CULTIVATABLE.																																
		Class VI	Very little slope; not subject to erosion, but poorly drained.																																
		Class VII	Suitable for permanent vegetation.																																
		Class VIII	Severe limitations for permanent vegetation.																																
			Sandy, wet, or stony, used for wildlife or recreation.																																

30 X



Station No. \_\_\_\_\_

## PART II

Proper land treatments needed for different land classes. Select the practices needed to conserve soil and water and maintain or improve productivity, and record it by (X) in the proper square.

Score	Check with X	
		<b>VEGETATIVE</b>
		1. Use soil conserving and improving crops every 4th and 5th year.
		2. Use soil conserving and improving crops every 3rd or 4th year.
		3. Use soil conserving and improving crops every 2nd year.
		4. Use soil conserving and improving crops every year.
		5. Do not burn crop residue.
		6. Residue management.
		7. Proper pasture or range management.
		8. Establish recommended grass and/or legumes.
		9. Control weeds.
		10. Control grazing.
		11. Plant recommended trees.
		12. Thin crowded trees effectively.
		13. Use only for wildlife or recreation area.
		<b>MECHANICAL</b>
		14. Waterway should be established.
		15. Terrace.
		16. Farm on contour.
		17. Maintain terraces each year.
		18. Install drainage system.
		19. Control gullies.
		20. Permanent strips on contour.
		<b>LIME AND FERTILIZER</b>
		21. Lime
		22. Manure
		23. Phosphorus ( $P_2O_5$ )
		24. Potassium ( $K_2O$ )
		25. Nitrogen (N)
		26. Magnesium (Mg)

30 X

SCORE \_\_\_\_\_ PART II



## OBJECTIVES OF 4-H LAND JUDGING

1. To give 4-H members an appreciation of the soil and what it means to us.
2. To give 4-H members the opportunity to learn soil structure, power of erosion and proper land treatment.
3. To learn how land is classified according to its capabilities.
4. To learn to use each acre of agriculture land within its capabilities and the treatment of each acre in accordance with its needs for protection and improvement.
5. To give 4-H members leadership training.





## 4-H Club Pledge

*I Pledge:*

**My Head to clearer thinking,**

**My Heart to greater loyalty,**

**My Hands to larger service, and**

**My Health to better living for**

**My Club, My Community, My Country, and  
My World.**