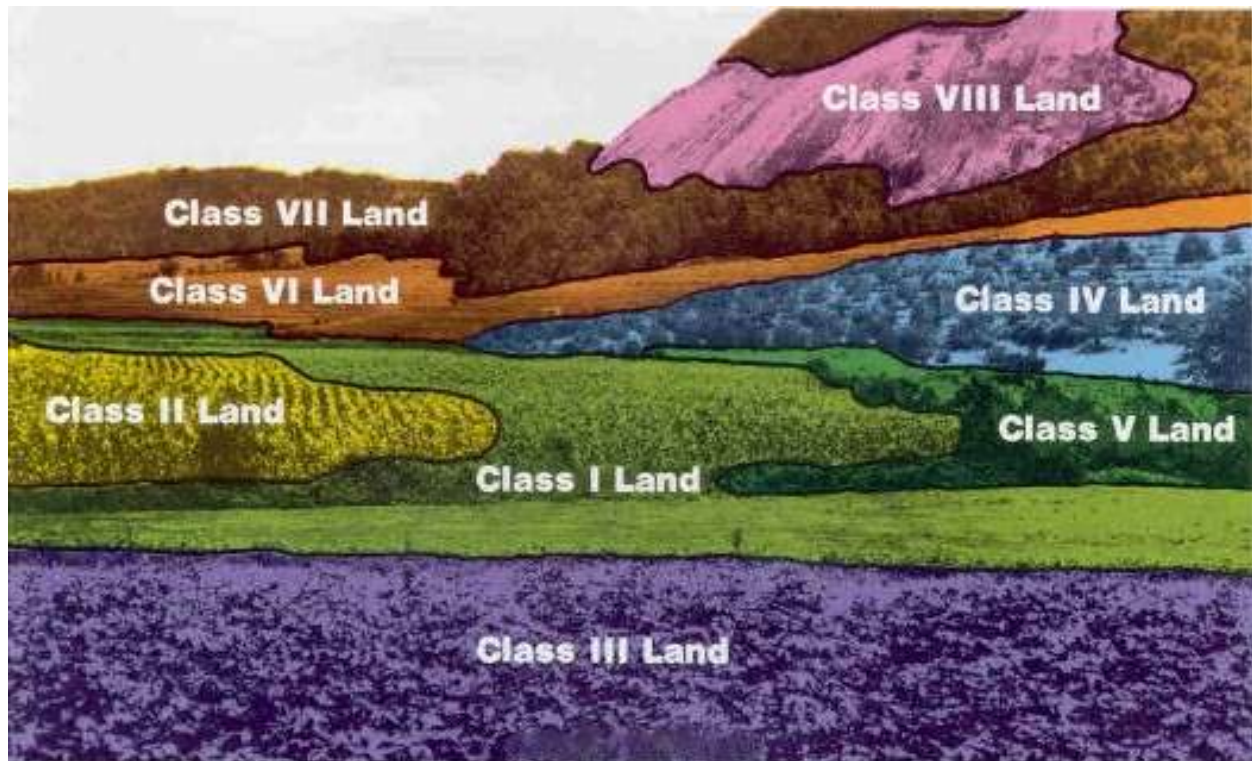


Land Capability Classification

Land capability classes and in most cases, subclasses are assigned to each soil. They suggest the suitability of the soil for field crops or pasture and provide a general indication of the need for conservation treatment and management. There are 8 capability classes. Capability classes are designated by either Arabic or Roman numerals (I through VIII), which represent progressively greater limitations and narrower choices for practical land use. Capability subclasses are noted with an e, w, s, or c following the capability class; for example, Ie. The "e" indicates that the soil is erosive. A "w" signifies a wetness limitation. An "s" denotes a shallow, droughty, or stony soil. A "c" indicates a climatic limitation. No subclasses are shown for capability class I because these soils have few limitations. Figure 1 illustrates some of the capability classes on a landscape.

Figure 1 Shows an example of Land Capability Classes outlined.



Of the eight capability classes, only the first four are considered usable for cropland. Class I land has little or no hazard for crop production and is the best agricultural land. Classes II, III and IV need progressively more care and protection when cultivated crops are grown. Soils in classes V, VI and VII are suited for adapted native plants (such as forests), although some soils in classes V and VI are capable of producing specialized crops such as fruit trees and ornamentals. Soils in

class VIII do not respond to management without major reclamation since they include the very steep and rocky areas of the mountain regions and the very wet tidal marshes in Maryland.

Capability Classes Suitable for Cultivation of Row Crops

Class I

Soils In this class have few limitations that restrict their use.

These soils are the best in nearly all respects for both agricultural production and nonagricultural uses. They are deep (1 m (40 in. or more)), well drained and medium textured with medium to high available water capacities, moderate permeability and none to moderate erosion. These soils are easily worked and are among the most productive in the state. Slopes should not exceed 2 percent in the Coastal Plain or 3 percent in the Piedmont and Appalachian provinces. Management should include maintenance of proper plant nutrient balance and tilth.

Class II

Soils in this class have some limitations that reduce the choice of plants or require moderate conservation practices.

Although these soils are rated good and usually are productive, some physical conditions render them less desirable than class I land. Likewise, the drainage class, soil depth, permeability or available water capacity maybe less desirable than class I soils. In general, slopes ranging between 2 and 5 percent in the Coastal Plain, and 3 and 8 percent in the remainder of the state would place this soil in class II. Drainage may be the limiting factor with mottling within the 20 to 40 in. zone of the profile. A slow or rapid permeability, low available water capacity or moderate soil depth (0.5 to 1 m (20 to 40 in.)) also could eliminate this soil from class I. Although several limitations may exist, only one is necessary to place this soil in class n. Management practices, in addition to those for class I, should include moderate erosion control (including rotations with sod or cover crops), contour fanning, moisture retention methods or drainage depending on the type of limitation.

Class III

Soils in this class have severe limitations that reduce the choice of plants or require special conservation practices, or both.

Limitations similar to class II soils may be present in these soils, but these limitations are more severe, restricting the use of these soils. Large acreages of class III land are strongly sloping and subject to moderate to severe erosion. Slope limits for this class range between 5 and 10 percent for the Coastal Plain and 8 and 15 percent for the remainder of the state. If drainage is the limiting factor, mottling should occur within the 20 in. zone, indicating that saturated conditions or high water tables are present at some time during the year .Shallow soils (less than 0.5 m (20 in.)), coarse-textured surface layers, fine- textured subsoils with slow permeability or very low available water capacity also can limit the use of soils to the extent that they are placed in

this class. The very coarse soils with very low available water capacities also fit into this class and require irrigation to realize production.

The soils in this class require more intense management than the previous classes. Management practices should include intensive erosion control measures such as terracing and strip-cropping. Where excessive water is limiting, drainage practices are necessary to make these soils productive.

Class IV

Soils In this class have very severe limitations that restrict the choice of plants or require very careful management, or both.

Where erosion is limiting, this land is good for only occasional cultivation under careful management. Sod crops should occupy a large portion of the rotation because of the severe erosion hazard. Slope limits for this class range between 10 and 15 percent in the Coastal Plain, and 15 and 25 percent in the Piedmont and Appalachian sections of the state. Very poorly drained soils in depressions have such high water tables, or are saturated for such long periods, that only very intensive drainage management can make these soils productive.

Soils that are severely eroded or gullied with little or no surface soil must be placed in this capability class, even though these soils may occur on slopes similar to those required for class III soils (see note on Figure 9).

Very intensive management practices are required for production on these soils. Where erosion is the hazard, cultivated crops may be grown only once in several seasons. Sod crops such as hay, pasture or cover crops are necessary to minimize the erosion loss. Even under excellent management, crop failures or severe yield reductions can be expected occasionally.

Capability Classes Unsited for Cultivation

Class V

Soils in this class are nearly level and not subject to erosion, but because of excessive wetness resulting from frequent flooding or some permanent obstruction like rock outcrops, they are not suited for cultivation.

Streams that overflow frequently, excessive seepage, very stony soils or numerous outcroppings of bedrock make these soils unsited for cultivation. Many of these soils are deep, however, and they have few limitations for pasture or forestry. These soils respond to good management, which is necessary for satisfactory production.

Class VI

Soils in this class have severe limitations that make them generally unsuited for cultivation, and that limit their use largely to pasture, woodland, or wildlife food and cover.

These soils have continuing limitations that cannot be corrected economically such as steep slopes (15 to 25 percent in the Coastal Plain and 25 to 50 percent in the Piedmont and Appalachian provinces), a severe erosion hazard, effects of past erosion, or stoniness. These factors produce some limitation for pasture and forestry. It should be pointed out that even for most of these uses, the better classes are preferred for maximum protection.

Class VII

Soils in this class have very severe limitations that make them unsuited for cultivation and that restrict their use largely to grazing, woodland or wildlife.

Although not suited for cultivation, intensive management can make productive pasture and woodland possible. Even in rough, timbered areas, special care is required to prevent excessive erosion. Soils on very steep slopes, very shallow soils and very stony soils that occur on slopes greater than 25 percent in the Coastal Plain and greater than 50 percent in the Piedmont are the most common members of this class. This class includes the least capable soils with regard to pasture and woodland.

Class VIII

Soils and landforms in this class have limitations that preclude their use for commercial production of plants and restrict their use to recreation, water supply, wildlife or esthetic purposes.

Tidal marshes that are flooded daily, continuously ponded areas (areas containing water for more than 6 months of a year), and areas with greater than 90 percent rock outcrop, stones or boulders are included in this class as well as borrow pits, barren mine dumps and sandy beaches. These land areas have few or none of the physical soil features (found in class I soils) necessary to support any type of agriculture.

Other management interpretations

Some soil surveys, or addenda to the surveys, have special tables on important agronomic soil interpretations. A few tables may be in the form of a soil's potential for a specified use, such as its potential for cropland. Other tables group soils for specific programs; such as prime or unique farmland, land capability classification, highly erodible lands, and hydric soils.

Hydric soils are wet soils defined as a group for the purpose of implementation of legislation for preserving wetlands and for assessing the potential habitat for wildlife. The soils considered

to be hydric were selected on the basis of flooding, water table, and drainage class criteria. Hydric soils developed under wet conditions (anaerobic within 30 cm (12 in.)) and can support the growth and regeneration of hydrophytic vegetation. Indicators we look for in the field to identify hydric soils include organic soils, 40 cm (16 in.) of organic soil material in the upper 80 cm (32 in.); histic epipedon, 20 cm (8 in.) of organic soil material in the upper 40 cm (16 in.); gleyed or low chroma colors, a predominance of gray colors due to wetness; high organic matter in sandy soils; and organic streaking in sandy soils.

You can also identify the soil series and look to see if it is listed on the county hydric soils list. The hydric soils list, developed for the 1982 Farm Bill, is included in the Soil Conservation Service Field Office Technical Guide, Section II. Some map units that have inclusions of soils that meet the hydric soil criteria are added to the field office listing.

Highly erodible soil and potentially highly erodible soil are also listed in Section II of the Soil Conservation Service Field Office Technical Guide. The criteria used to group highly erodible soils were formulated using the Universal Soil Loss Equation and the wind erosion equation. The criteria are in the National Food Security Act Manual. Soil use, including tillage practices, is not a consideration.

Areas defined as highly erodible can be held to an acceptable level of erosion by following approved practices in a conservation plan. Various conservation practices, such as residue management, reseeding to grasses, contour farming, and terraces, are used in conservation planning to reduce soil loss, maintain productivity, and improve water quality.

Prime farmland soils are listed by map unit name in the tables or the "Prime Farmland" section of the soil survey. These soils have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oil seed crops. Unique farmland is land other than prime farmland that is used for the production of specific high value crops, such as citrus, tree nuts, olives, cranberries, fruit, and vegetables.