

United States
Department of
Agriculture
Natural
Resources
Conservation
Service

Summary Report



1997 National Resource Inventory For Virginia

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National Resources Inventory

Introduction

The 1997 National Resources Inventory (NRI) is the latest in a series of inventories conducted by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS). In Virginia, the data were collected on 7908 primary sample units (PSUs). PSUs are approximately 110 acres in size and most contain three sample points where the information was gathered. The data in this inventory was gathered using remote sensing techniques by NRCS employees.

The NRI provides updated information on the condition of Virginia's soil, water, and related resources on rural non-federal land. Included are data on land use, land cover, erosion by water, prime farmland, water bodies, irrigation, wetlands, habitat diversity, selected conservation practices and related resource attributes. At each sample point, information is available for 1982, 1987, 1992, and 1997, so that trend and changes in land use and resource characteristics over a 15-year time period can be examined and analyzed. The 1997 NRI will reflect changes in land treatment stemming from the Food Security Act of 1985. The database is nationally consistent for all rural non-federal lands and can be correlated with soil information.

NRCS conducts inventories and monitors the status of land use, soil, water, and related resources. Information derived from the NRI is used by natural resource managers; policy makers and analysts; consultants; the media; other Federal agencies; State governments; universities; environmental, commodity, and farm groups; and the public. These constituents use NRI information to formulate effective

public policies, fashion agriculture and natural resource legislation, develop State and National conservation programs, allocate USDA financial and technical assistance in addressing natural resource concerns, and enhance the public's understanding of natural resources and environmental issues.

NRCS uses standardized techniques and procedures in inventory and monitoring activities. Inventories are designed to monitor changes in natural resources, to provide information on the causes of change and to predict trends. Inventorying involves examination of a particular population or universe of resources, materials, or information. The universe is examined by observing all of its units (census) or some of its units (sampling). A census or sampling procedure can be supplemented by remote sensing.

The NRI is designed to collect resource data through primary sample units selected by a stratified random sample.

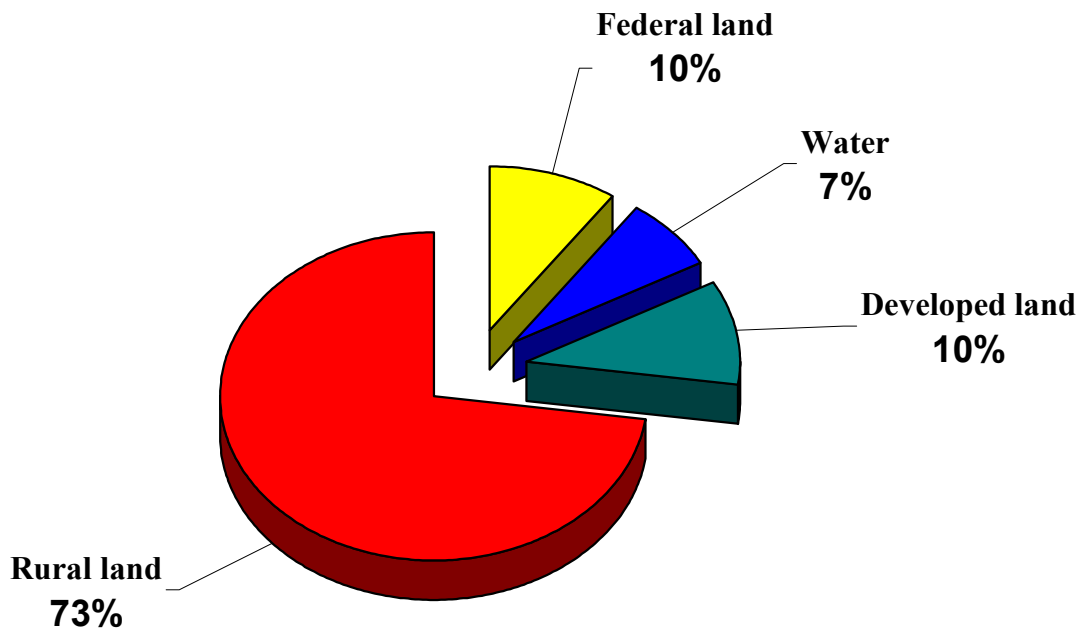
When using resource data from the NRI and similar inventories, it is important to realize that each item being estimated has a different level of precision or reliability. Characteristics that are common and spread with relative uniformity over the region of interest have similar coefficients of variation than characteristics that are rare and unevenly distributed. Consequently, in multiple-purpose surveys like the NRI, the common items sampled are estimated more precisely than the less common items.

The 1997 NRI utilized remote sensing almost exclusively for data collection. Data gatherers recorded information with the assistance of innovative technology - personal digital assistants and computer-assisted survey instruments. Data collected in the 1997 NRI enabled an analysis of trends extending over 15 years.

Major Surface Areas in Virginia

Virginia's surface area totals 27,078,100 acres. This area consists of four broad categories. Rural land is the largest followed by federal, developed land and water.

**Major Surface Areas in Virginia
(percentages of acres)**



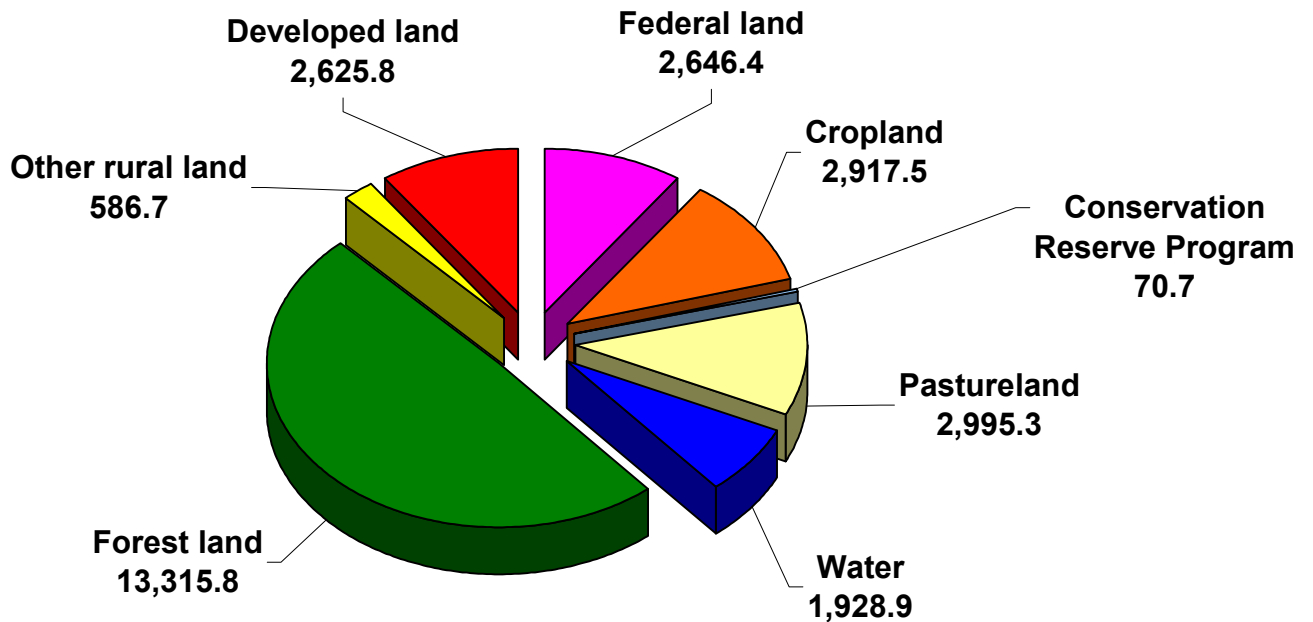
Land Cover/Use in Virginia

The major land use in Virginia is forest land. Non-federal agriculture land including cropland, pastureland and forest land accounts for 19,299,300 acres, or about 71 percent of the land use.

Federal land, developed land (including urban built-up and rural transportation) and water areas account for 7,201,100 acres or 27 percent of the area.

The remaining acres of other rural land accounts for 586,700 acres or about 2 percent of the area.

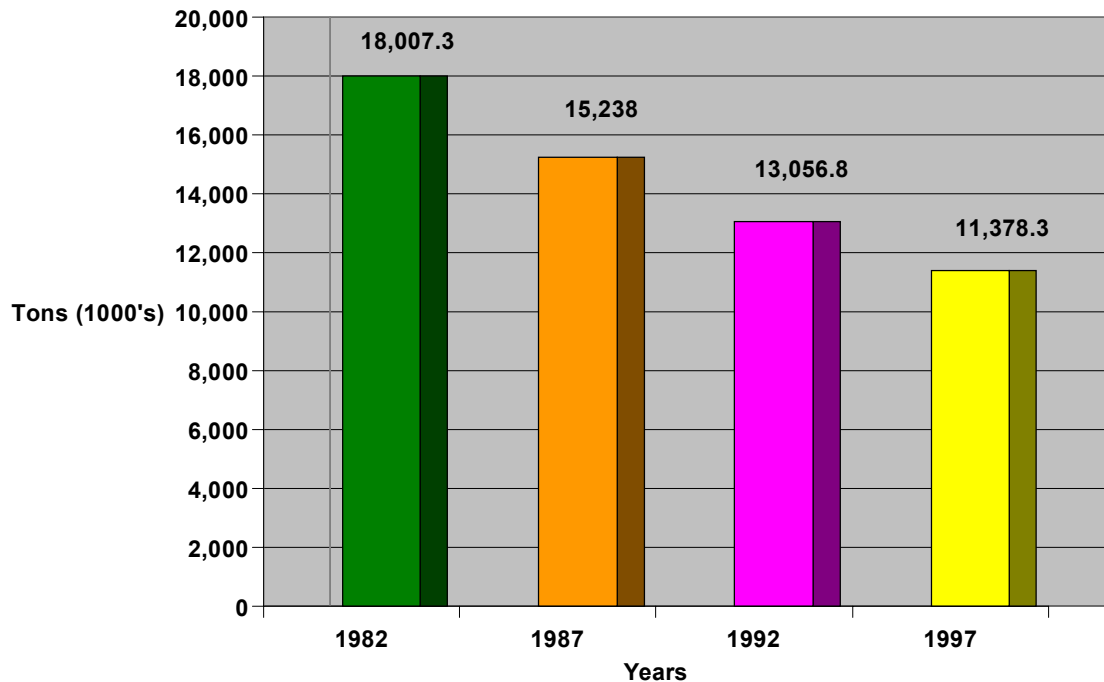
**1997 Land Cover/Use in Virginia
(thousands of acres)**



Soil Erosion

Successful implementation of 1985 and 1990 Farm Bill programs has put land owner stewardship at an all time high. Since 1982 erosion on cropland and land enrolled in the USDA's Conservation Reserve Program (CRP) has reduced total erosion by 37 percent.

Tons of Soil Saved on Virginia Cropland (trend 1982-1997)



Since 1982 the erosion rate on cropland has been reduced from an average of 5.3 tons /acre/year to 3.9 tons/acre/year.

Excessive erosion continues to be a serious concern in many parts of the state. Approximately 1,345,500 acres of highly erodible cropland currently in production, will continue to be a major resource concern in Virginia.

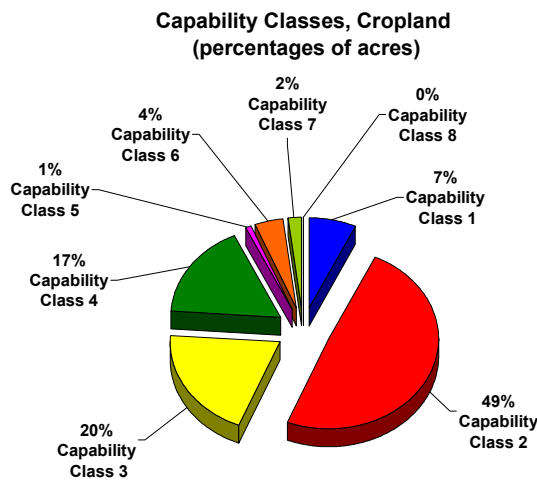
Capability Classes

Land Capability groupings are used extensively by soil conservationists and farmers.

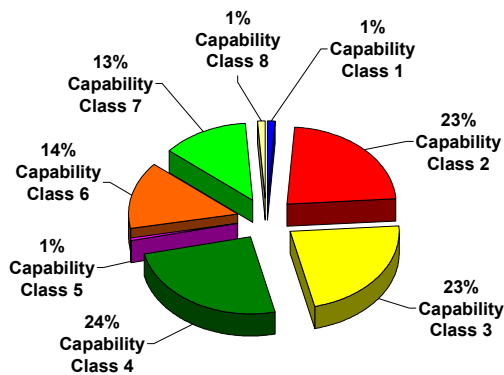
Capability classification is an interpretive grouping made primarily for agriculture purposes. Soils are grouped according to their potentials and limitations for sustained production of the common cultivated crops that do not require specialized site conditioning or site treatment.

Soils unsuitable for longtime sustained use for cultivated crops are grouped according to the potentials and limitations for the production of permanent vegetation and according to their risk of soil damage if mismanaged.

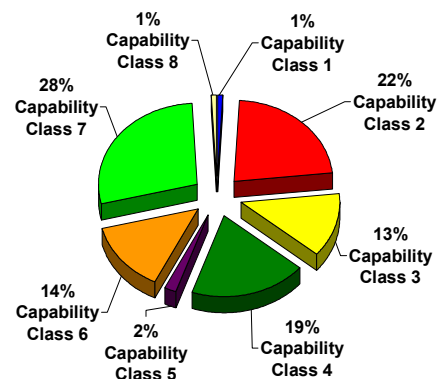
The system consists of eight categories with Class 1 having the fewest limitations.



Capability Classes, Pastureland
(percentages of acres)



Capability Classes, Forest land
(percentages of acres)

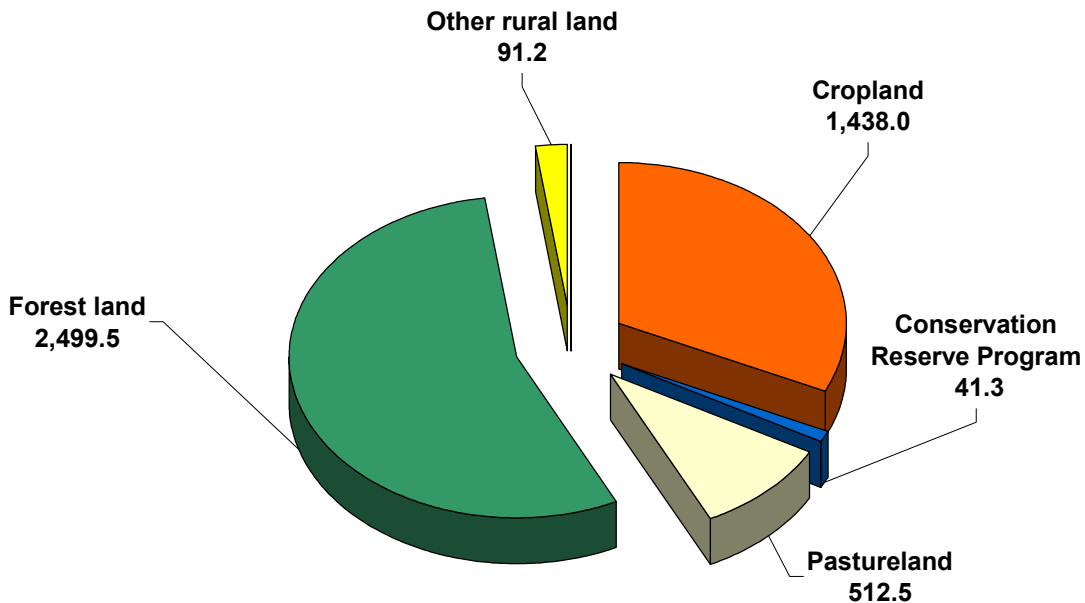


Prime Farmland

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses. The land could be cropland, pastureland, forest land, or other land but not urban built-up land or water.

Prime farmland has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops.

Prime Farmland, 1997 Land Cover/Use (thousands of acres)



From 1982 to 1997, 308,300 acres of cropland designated as prime farmland were converted to other uses.

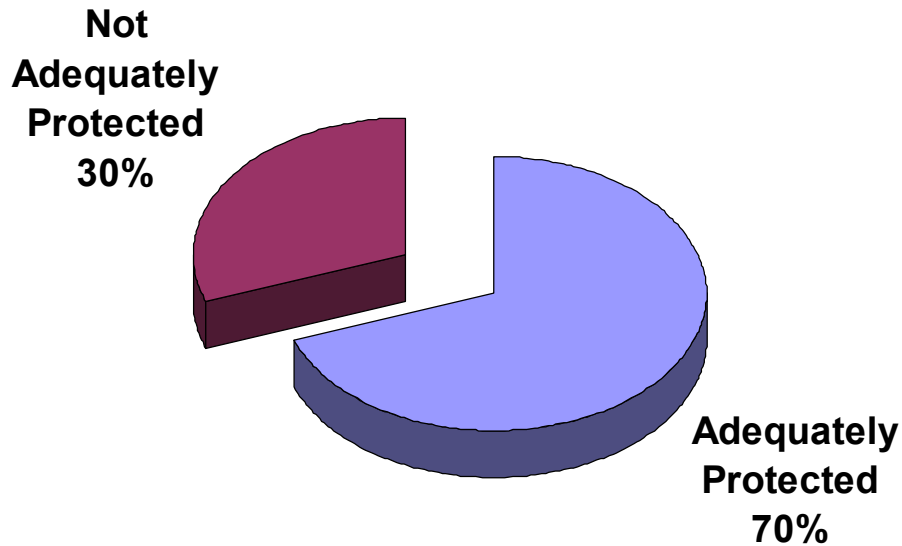
Approximately 98,900 acres or 32 percent of the converted prime farmland has been permanently lost to development since 1982.

Conservation needs in Virginia

Virginia's cropland totals 2,917,500 acres, of that total approximately 2,028,600 acres (70 percent) of Virginia's cropland is adequately protected. The remaining 888,900 acres (30 percent) of cropland is not adequately protected.

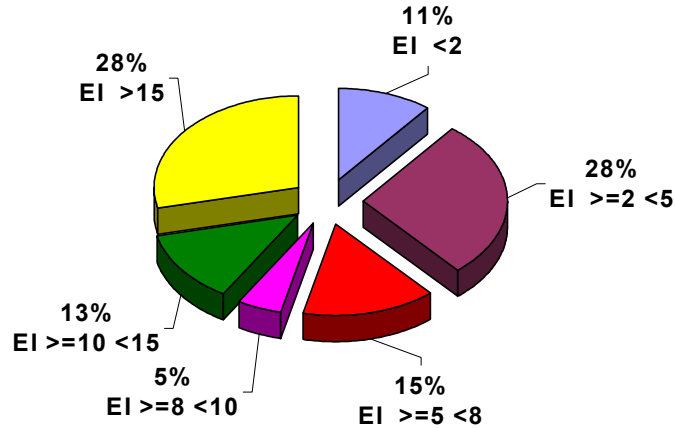
With the decrease in total cropland acres in Virginia, adequate protection of this resource becomes vital in maintaining sustainable agriculture. Adequate protection includes cropland where the soil loss tolerance (rate of soil loss) will not impair long term soil productivity.

**1997 Conservation needs on Cropland in Virginia
(percentages of acres)**

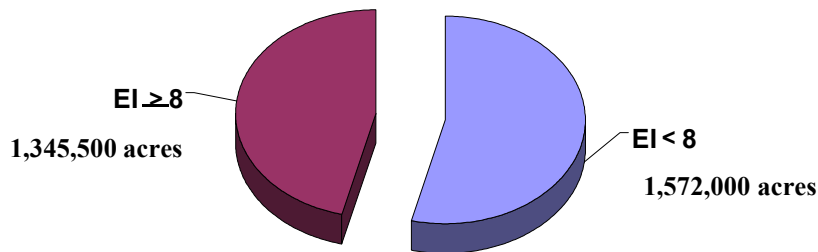


Erodibility Index for Cropland

Erodibility Index (EI) for Cropland, 1997



The Erodibility Index (EI) is determined by dividing the potential erodibility by the soil loss tolerance (T) value. The higher the Index, the greater the investment needed to maintain the sustainability of the soil resource base if intensively cropped. EI values above 8 equate to highly erodible lands. The Erodibility Index is used to determine eligibility for many Farm Bill Programs.



Approximately 1,345,500 acres of cropland have an EI of greater than 8 and are considered highly erodible. This cropland will require continued treatment in order to sustain the soil resource and maintain water quality.

Where did Virginia's cropland go?

Acres converted from cropland to other uses between 1982 and 1997.

Land Cover/Use	Acres (1,000)
Urban Built-up	172.5
Pastureland	386.1
Forest land	220.9
CRP land	57.7
Other	58.9
Total Acres Converted	896,100 acres

Cropland losses

As shown between 1982 and 1997, 896,100 acres of cropland were converted to other uses.

3,397,600	Total cropland acres in 1982
<u>-896,100</u>	<u>Acres converted to other uses between 1982 and 1997</u>
2,501,500	Acres of original 1982 cropland remaining

Acres converted from other uses to cropland between 1982 and 1997

Land Cover/use	Acres (1,000)
Pastureland	292.5
Forest land	102.8
Other	20.7
Total acres converted	416,000Acres

Cropland gains

As shown between 1982 and 1997, 416,000 acres of other land cover/use was converted to cropland.

2,501,500	Acres of original 1982 cropland remaining in 1997
<u>+ 416,000</u>	<u>Acres converted from other uses between 1982 and 1997</u>
2,917,500	Acres of cropland in 1997

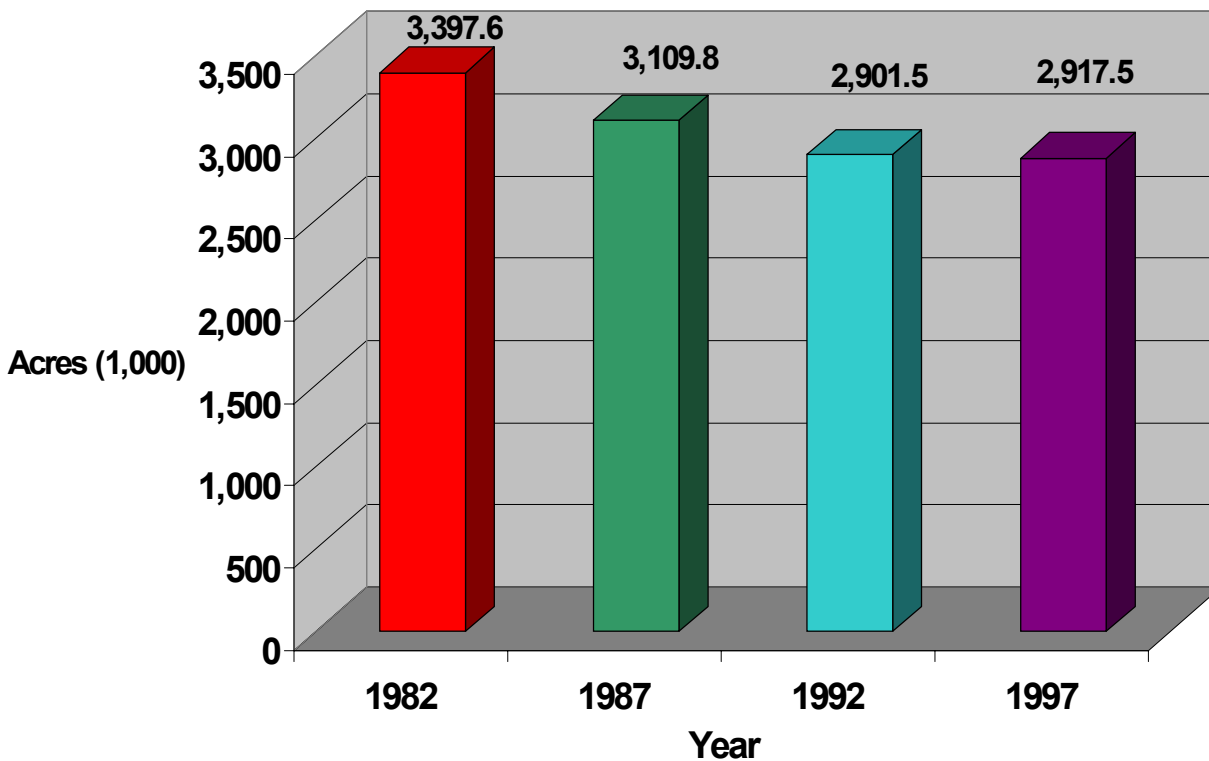
Changes resulted in a net loss of 480,100 acres of cropland.

Cropland in Virginia

Cropland in Virginia has declined. An analysis of the decline over a fifteen-year period shows a total of 480,100 acres have been converted to other land cover/uses. These land cover/uses include urban land, pastureland, forest land, CRP land and other.

Land cover/use is dynamic and therefore changes in cover/use occur between each inventory period. Approximately 36 percent of the total acres converted was permanently lost to urban land over the fifteen year period.

Cropland in Virginia (trend 1982-1997)

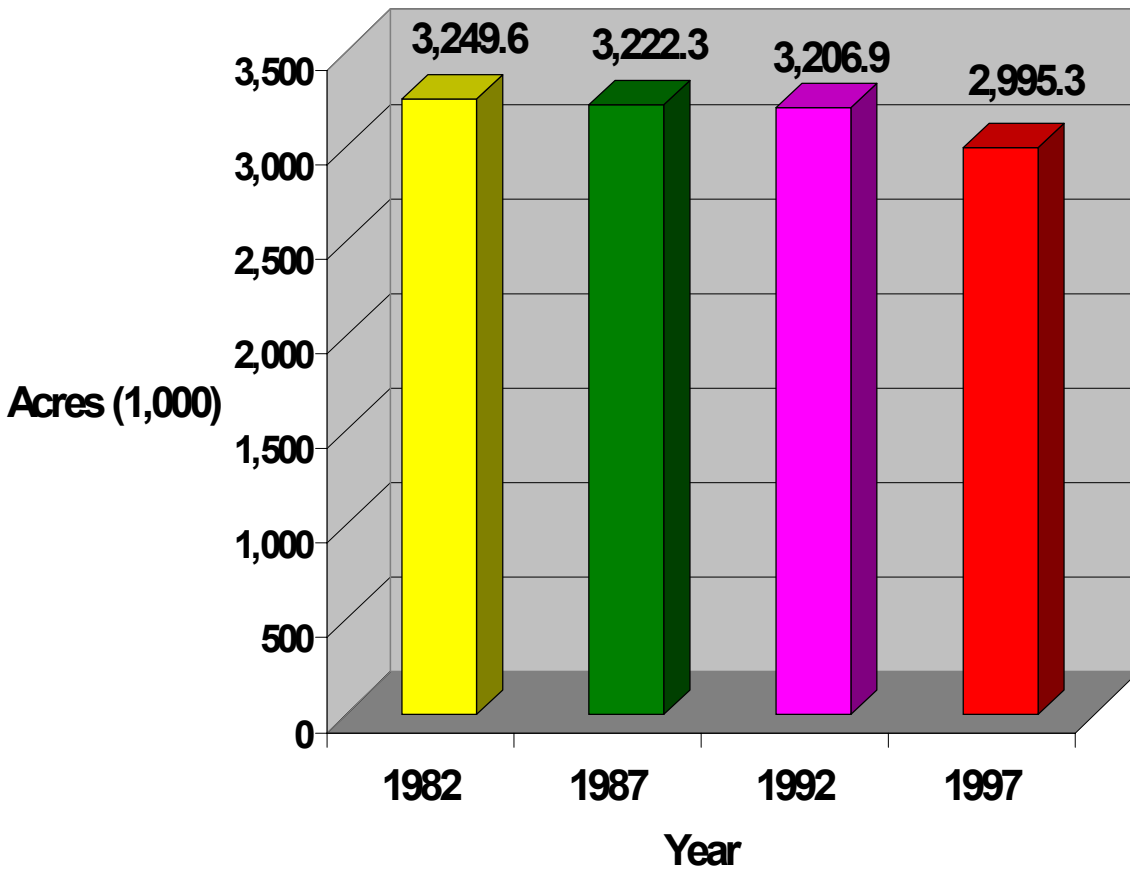


Pastureland in Virginia

Pastureland in Virginia has declined. An analysis of the decline over a fifteen-year period shows a total of 254,300 acres have been converted to other land cover/uses. These land cover/uses include urban land, pastureland, forest land, CRP land and other.

Land cover/use is dynamic and therefore changes in cover/use occur between each inventory period. Approximately 50 percent of the total acres converted was permanently lost to developed land over the fifteen year period.

Pastureland in Virginia (trend 1982-1997)



Source Data: USDA Natural Resources Conservation Service, Virginia 1997 NRI (Revised 12/2000)
Virginia Summary Report release 02/12/01)

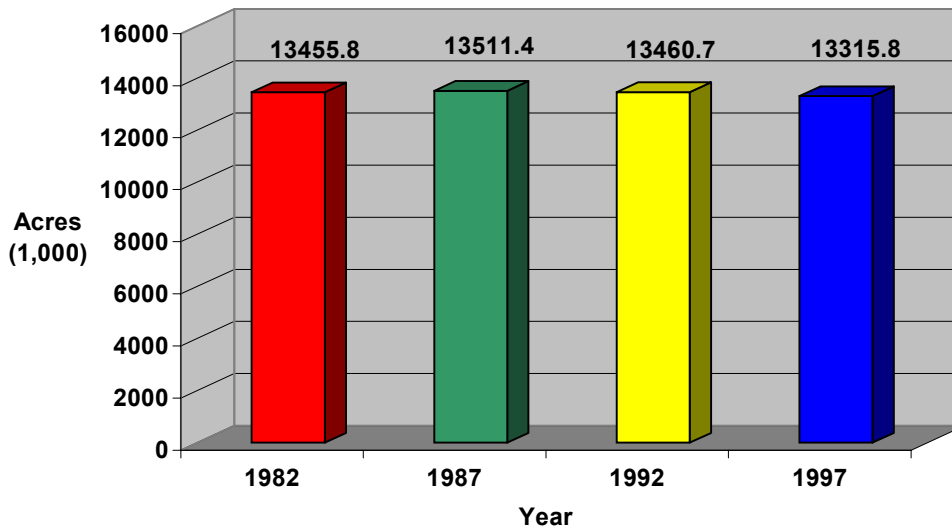
Forest Land in Virginia

An analysis of the data of forest land in Virginia shows an increase in the first five years of the fifteen-year trend. The remaining 10 years reflect a decline in the number of acres. Net loss in the number of forest land acres over the fifteen-year trend is 140,000 acres. The majority of these losses were to developed land.

Land cover/use is dynamic and therefore changes in cover/use occur between each inventory period. Developed land accounted for 467,800 acres converted. Additional conversions of 42,500 acres were lost to other uses. However conversion of cropland, pastureland and minor land to forest land offset some of these losses. The resulting net loss over the period is 140,000 acres.

Developed land accounted for most of the forest land converted. Additional losses are accounted for in water, federal land and rural transportation.

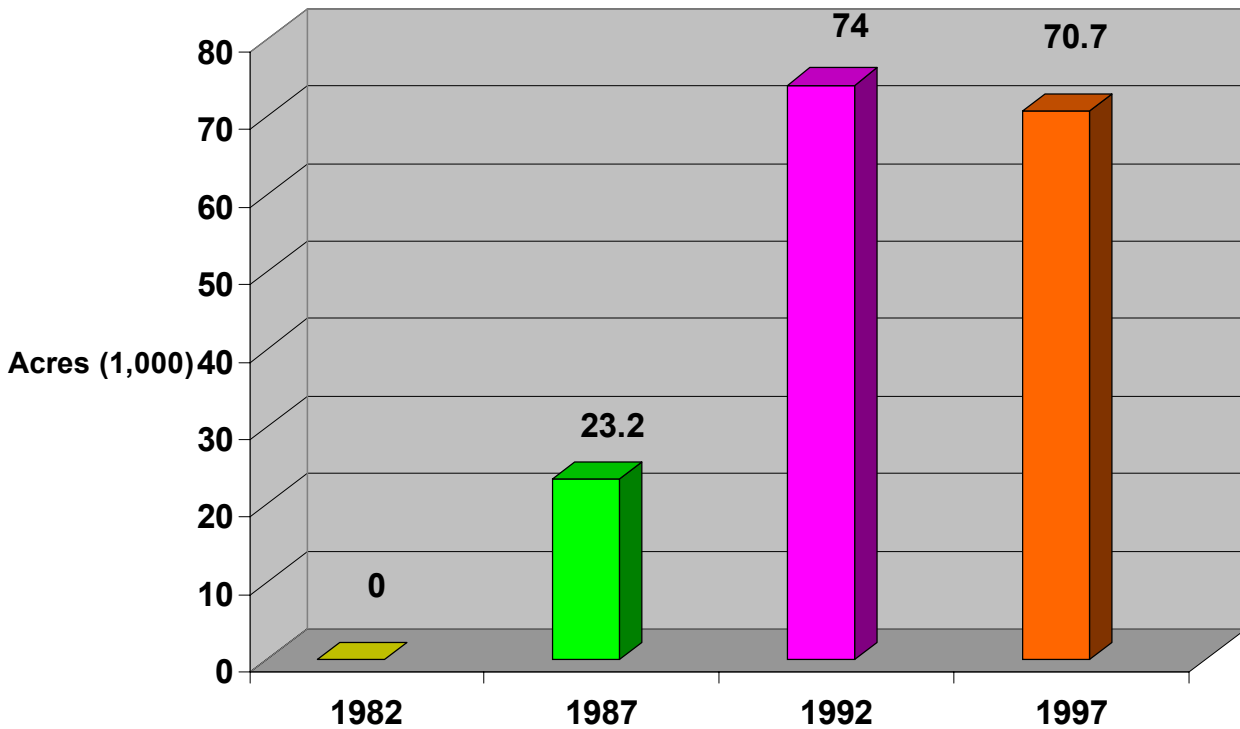
Forest land in Virginia (trend 1982-1997)



Conservation Reserve Program

In 1987 a total of 23,200 acres of cropland and pastureland became part of the Conservation Reserve Program in Virginia. From 1987 to 1992, 43,800 acres of cropland, 4,300 pastureland, 1,800 acres of minor land and 900 acres of forestland were entered into the program bringing the total to 74,000 acres. During the period 1992 to 1997 a decrease of 3,300 acres resulted in a total of 70,700 acres in the program. Contracts not be renewed at the end of the 10 period may account for the decrease in the number of acres.

Conservation Reserve Program (CRP) (trend 1982-1997)



Conservation Reserve Program (CRP) began in 1985.

Land Cover/Use converted to Urban Land (trend 1982-1997)

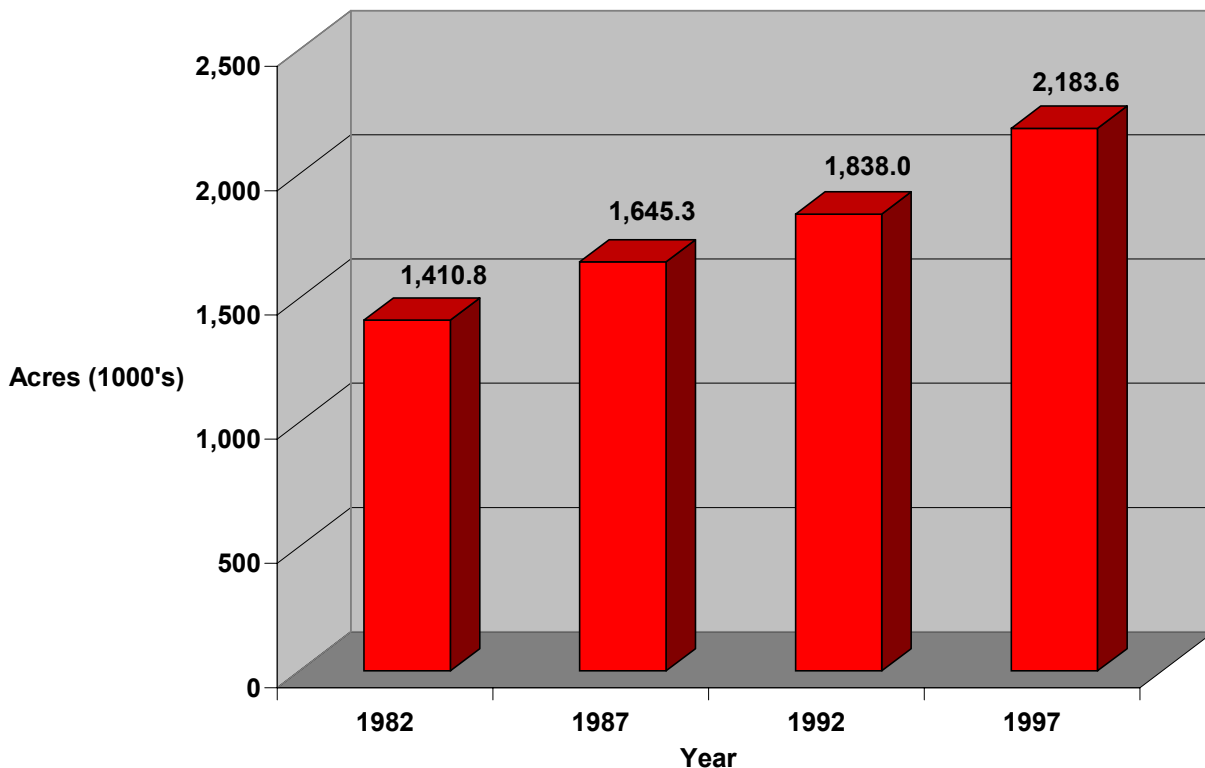
The inventory reflects continued conversion of Virginia's rural land to development. The most significant losses during the fifteen year trend are conversions from forest land followed by cropland and pastureland.

Today, unparalleled growth and prosperity in non-agricultural are leading to rapid expansion of small and mid-sized cities onto agricultural land.

In 1997, urban land totaled about 8 percent of the total surface area in Virginia. The NRI shows that nearly 772,800 acres of land were developed in Virginia during the fifteen year period.

From 1982-1987 the percentage of land converted to urban use was at the rate of about 17 percent. This conversion continued at a rate of approximately 12 percent during 1987-1992, while in 1992-1997 the rate increased to nearly 19 percent.

Land Cover/Use Urban Land (trend 1982-1997)



Glossary of Selected Terms

Aerial photograph. A photograph of the earth's surface taken from airborne equipment. Sometimes called aerial photo or air photograph. [IDRS]

Artificial and modified surfaces. A *General cover* category consisting of roads and right-of-ways, buildings, parking lots, *farmsteads and ranch headquarters, urban and built-up areas*, small built-up areas, *rural transportation*, and any other buildings that have a surface area greater than 1,000 square feet.

Barren. A *General cover* category consisting of nonvegetated lands, including alkaline barrens, unreclaimed mined land, and other barren areas incapable of supporting vegetation. Barren areas are nonvegetated either because the substrate will not support plant growth or because the area is subject to frequent disturbance (e.g., scouring, flooding) that prevents plant growth. [NRI-97]

Barren land. A *Land cover/use* category used to classify lands with limited capacity to support life and having less than 5 percent vegetative cover. Vegetation, if present, is widely spaced. [NRI-87]

- Typically, the surface of barren land is sand, rock, exposed subsoil, or salt-affected soils. Subcategories include *salt flats; sand dunes; mud flats; beaches*; bare exposed rock; quarries, strip mines, gravel pits, and borrow pits; *river wash*; oil wasteland; mixed barren lands; and other barren land. [NRI-92]

Beach. A *Barren land* subcategory. Includes the area adjacent to the shore of an ocean, sea, large river, or lake that is washed by the tide or waves. [NRI-92]

Built-up land. See Urban and built-up areas. [NRI-92]

C factor (USLE). See Cover and management factor.

C factor (WEQ). See Climatic factor.

Census water. Includes water bodies of at least 40 acres and perennial streams at least 1/8 mile wide. Also referred to as *Large water bodies* and *Large streams*. [NRI-97]

Climatic factor (C factor – WEQ). Characterizes climatic erosivity, specifically wind speed and surface soil moisture. The factor for any given locality is expressed as a percentage of the C factor for Garden City, Kansas, which has a value of 100. [NAM-88]

Close-grown crops. Crops that are generally drill-seeded or broadcast, such as wheat, oats, rice, barley, and flax. [BS-1982]

Conservation district. A public organization created under state-enabling law as a special-purpose district to develop and carry out a program of soil, water, and related resource conservation, use and development within its boundaries; in the United States usually a subdivision of a state government with a local governing body; often called a resource conservation district (RCD), soil conservation district, or a soil and water conservation district. [Soil Conservation Society of America (SCSA), Resource Conservation Glossary, 1982]

Conservation practice. A specific treatment, such as a structural or vegetative measure or management technique commonly used to meet specific needs in planning and conservation, for which standards and specifications have been developed. Conservation practices are in the NRCS Field Office Technical Guide, Section IV, which is based on the National Handbook of Conservation Practices. (NPPH-98).

- The practices recorded for NRI have been applied to the area of land in which the NRI point falls or the portion of the field that would be used in conservation planning. The point need not fall on a specific practice. [NRI-97]

Conservation Reserve Program (CRP). A federal program established under the Food Security Act of 1985 to assist private landowners to convert highly erodible cropland to vegetative cover for 10 years. [NMCSP]

Conservation Reserve Program (CRP) land. A *Land cover/use* category that includes land under a CRP contract. [NCPM]

Cover and management factor (C factor – USLE). The ratio of soil loss from an area with specific cover and management to that from an identical area in tilled continuous fallow. [AH 537]

Cropland. A *Land cover/use* category that includes areas used for the production of adapted crops for harvest. Two subcategories of cropland are recognized: cultivated and noncultivated.

Cultivated cropland comprises land in *row crops* or *close-grown crops* and also other cultivated cropland, for example, hayland or pastureland that is in a rotation with row or close-grown crops. Noncultivated cropland includes permanent *hayland* and *horticultural cropland*. [NRI-97]

Cropping history. A record of the crop that was on the land during each of the 3 years preceding the current inventory year. These data are recorded on *cropland*, *pastureland*, and CRP land cover/uses only. Data are used to determine some of the values used to calculate water and wind erosion rates. [NRI-97]

Cultivated cropland. See Cropland.

Developed land. A combination of land cover/use categories, Urban and built-up areas, and Rural transportation land.

Erodibility index (EI). A numerical expression of the potential of a soil to erode, considering the physical and chemical properties of the soil and climatic conditions where it is located. The higher the index, the greater the investment needed to maintain the sustainability of the soil resource base if intensively cropped. EI scores above 8 are equated to highly erodible land.

Erosion. The wearing away of the land surface by running water, waves, or moving ice and wind, or by such processes as mass wasting and corrosion (solution and other chemical processes). The term "geologic erosion" refers to natural erosion processes occurring over long (geologic) time spans. "Accelerated erosion" generically refers to erosion that exceeds what is presumed or estimated to be naturally occurring levels, and which is a direct result of human activities (e.g., cultivation and logging). [NSSH-96]

Farmsteads and ranch headquarters. A *Land cover/use* category that includes dwellings, outbuildings, barns, pens, corrals and feedlots next to buildings, farmstead or feedlot windbreaks, and family gardens associated with operating farms and ranches. (Commercial feedlots, greenhouses, poultry facilities, overnight pastures for livestock, and field windbreaks are not considered part of farmsteads.) [NRI-92]

Federal land. See Ownership.

Field. A cultivated area of land that is marked out for a particular crop or cropping sequence. [NRI-97]

Forest land. A *Land cover/use* category that is at least 10 percent stocked by single-stemmed woody species of any size that will be at least 4 meters (13 feet) tall at maturity. Also included is land bearing evidence of natural regeneration of tree cover (cut over forest or abandoned farmland) and not currently developed for nonforest use. Ten percent stocked, when viewed from a vertical direction, equates to an areal canopy cover of leaves and branches of 25 percent or greater. The minimum area for classification as forestland is 1 acre, and the area must be at least 100 feet wide. [NRI-92]

General cover. Nine general cover categories are defined based upon vegetative structure (e.g., canopy cover percentage) or substrate characteristics (e.g., barren land/artificial surfaces).

They are:

<i>Crop</i>	<i>Short woody plants</i>	<i>Open canopy short wood plants</i>
<i>Herbaceous</i>	<i>Tall woody plants</i>	<i>Open canopy tall woody plants</i>
<i>Water</i>	<i>Barren</i>	<i>Artificial and modified surfaces</i>

- See also Habitat composition and Habitat configuration. [NRI-97]

Growing season. The period and /or number of days between the last freeze in the spring and the first frost in the fall for the freeze threshold temperature of the crop or other designated temperature threshold. [SCSA, Resource Conservation Glossary, 1982]

Habitat composition. The makeup or relative proportion of the *General cover* categories occurring about a point (see Primary sample unit). [NRI-97]

Habitat configuration. The arrangement of the nine *General cover* categories occurring about a point (see Primary sample unit). [NRI-97]

Habitat Patch. A term used to describe an area displaying a relatively uniform *General cover* type. Nine *General cover* categories are used to classify areas of relatively uniform cover. Each individual area is referred to as a habitat patch.

Hayland. A subcategory of *Cropland* managed for the production of forage crops that are machine harvested. The crop may be grasses, legumes, or a combination of both. Hayland also includes land in set-aside or other short-term agricultural programs. [NRI-92]

Herbaceous. A *General cover* category consisting of predominantly perennial herbaceous plants or noncultivated annuals or both. The tall woody canopy cover is less than 5 percent, and the short woody canopy cover is also less than 5 percent. Arid rangeland and desert can fall into this category although vegetation density and percentage of ground cover may be low. [NRI-97]

Horticultural cropland. A subcategory of *Cropland* used for growing fruit, nut, berry, vineyard, and other bush fruit and similar crops. Nurseries and other ornamental plantings are included. [NRI-97]

I factor (WEQ). See Soil erodibility index.

Irrigated land. Land that shows evidence of being irrigated during the year of the inventory or of having been irrigated during 2 or more of the last 4 years. Water is supplied to crops by ditches, pipes, or other conduits. *Water spreading* is not considered irrigation for this [1992] inventory. [NRI-92]

K factor (USLE). See Soil erodibility factor (USLE).

K factor (WEQ). See Ridge roughness factor (WEQ).

L factor (USLE). See Slope-length factor (USLE).

L factor (WEQ). See Unsheltered distance factor (WEQ).

Lake. A natural inland body of water, fresh or salt, extending over 40 acres or more and occupying a basin or hollow on the earth's surface, which may or may not have a current or single direction of flow. [NRI-97]

Land capability classification (class and subclass). Land capability classification is a system of grouping soils primarily on the basis of their capability to produce common cultivated crops and pasture plants without deteriorating over a long period. Land capability classification is subdivided into capability class and capability subclass nationally. [NSSH-96]

Capability class. The broadest category in the system. Class codes I to VIII indicate progressively greater limitations and narrower choices for agriculture. The numbers are used to represent both irrigated and nonirrigated land capability.

Capability subclass. The second category in the system. Class codes **e** (erosion problems), **w** (wetness problems), **s** (root zone limitations), and **c** (climatic limitations) are used for land capability subclasses.

Land cover/use. A term that includes categories of land cover and categories of land use. Land cover is the vegetation or other kind of material that covers the land surface. Land use is the purpose of human activity on the land; it is usually, but not always, related to land cover. The NRI uses the term land cover/use to identify categories that account for all the surface area of the United States. [BS-1982, NRI-92]

Large streams. *Perennial streams* at least 1/8 mile (660 feet) wide. [NRI-97]

Large urban and built-up areas. A *Land cover/use* category composed of developed tracts of at least 10 acres—meeting the definition of *Urban and built-up areas*. [NRI-92]

Large water bodies. Water bodies of at least 40 acres. [NRI-97]

Marshland. A subcategory of the *Land cover/use* category Other rural land, described as a nonforested area of land partly or intermittently covered with water and usually characterized by the presence of such monocotyledons as sedges and rushes. These areas are usually in a wetland class and are not placed in another NRI land cover/use category, such as *rangeland* or *pastureland*. [NRI-92]

Mines, quarries, and pits. Uses of land for extraction of ores, minerals, and rock materials; a subcategory of the *Land cover/use* category *Barren land*. [NRI-92]

Minor land cover/uses. See Other rural land. A miscellaneous group of land cover/uses that is sometimes used in NRI tables and reports but not in data collection.

Mud flat. A *Land cover/use* subcategory under *Barren land*. A mud area with less than 5 percent vegetative cover. [NRI-92]

Noncultivated cropland. See Cropland.

Open canopy short woody plants. A *General cover* category consisting of short woody canopy cover of 5 to 25 percent and tall woody canopy cover of less than 5 percent. The distinction between short (< 4 meters) and tall (> 4 meters) woody plants is made for current conditions, not potential. Arid rangeland and desert can fall into this category although vegetation density and percentage of ground cover may be low. [NRI-97]

Open canopy tall woody plants. A *General cover* category consisting of tall woody canopy cover of 5 to 25 percent and short woody canopy cover of less than 25 percent. The distinction between tall (> 4 meters) and short (< 4 meters) woody plants is made for current conditions, not potential. Arid rangeland and desert can fall into this category although vegetation density and percentage of ground cover may be low. [NRI-97]

Other rural land. A *Land cover/use* category that includes farmsteads and other farm structures, field windbreaks, *barren land*, and *marshland*. [Revised 1992 NRI *Summary Report*, omitting CRP land.]

Ownership. The separation of federal and nonfederal lands and the distinction between administrative units of land. Water areas are not classified according to ownership. The six categories of ownership are:

Private. A type of ownership pertaining to land belonging to an individual person or persons, a partnership, or a corporation (all of which are persons in the legal sense), as opposed to the public or the government; private property. [NRI-97]

Municipal. A type of ownership pertaining to land belonging to the local government of a town or city. [NRI- 92]

County or parish. A type of ownership pertaining to land belonging to an administrative subdivision of a state in the United States, which is identified as a county or an equivalent administrative unit in areas where counties do not exist; examples are parishes in Louisiana and boroughs in Alaska. [NRI-97]

State. A type of ownership pertaining to land belonging to one of the states, commonwealths, or territories of the United States of America. [NRI-97]

Federal land. A land ownership category designating land that is owned by the federal government. It does not include, for example, trust lands administered by the Bureau of Indian Affairs or Tennessee Valley Authority (TVA) land. No data are collected for any year that land is in this ownership. [NRI-92]

Indian tribal and individual Indian trust lands. A type of ownership of land administered by officially constituted Indian tribal or individual Indian trust entities. [NRI-97]

P factor. See Practice factor.

Pastureland. A *Land cover/use* category of land managed primarily for the production of introduced forage plants for livestock grazing. Pastureland cover may consist of a single species in a pure stand, a grass mixture, or a grass-legume mixture. Management usually consists of cultural treatments: fertilization, weed control, reseedling or renovation, and control of grazing. For the NRI, includes land that has a vegetative cover of grasses, legumes, and/or forbs, regardless of whether or not it is being grazed by livestock. [NRI-92]

Perennial stream. A stream or reach of a stream that normally flows continuously throughout the year. [NSSH-96]

Personal Digital Assistant (PDA). A hand-held, computer-assisted survey collection tool used to record NRI data. [NRI-97]

Photographic interpretation. The act of examining photography images for the purpose of identifying objects and judging their significance. [IDRS]

Practice factor (P factor – USLE). The ratio of soil loss with a support practice like contouring, stripcropping, or terracing, to soil loss with straight-row farming up and down the slope. [AH-537]

Primary sample unit (PSU). An area of land, typically square to rectangular in shape, that is approximately 40, 100, 160, or 640 acres in size. Within the PSU, *sample points* are assigned. Certain data elements are collected for the entire PSU, while others are collected at the PSU points. [NRI-92]

- The size of the PSU is based on the shape, size, and complexity of the resources being inventoried. In 34 states, PSU's are often 160-acre square parcels measuring 0.5 mile on each side. In the western United States, PSU's are often 40-acre or 640-acre square areas; the 40-acre units are used in most irrigated areas, and the larger PSU's are used in relatively homogeneous areas containing large tracts of *rangeland*, *forest land*, or *barren land*. In the 13 northeastern states, PSU's are defined to be 20 seconds of latitude by 30 seconds of longitude, ranging from 97 acres in Maine to 114 acres in southern Virginia. In Louisiana and parts of northwestern Maine, PSU's are 0.5 kilometer squares (61.8 acres). [NRI-92]

Prime farmland. Land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses. [NSSH-96]

Railroads. A category of *Rural transportation* areas that includes all operational rail systems and their rights-of-way. Abandoned railroad beds are not included as railroad areas. [NRI-97]

Rainfall and runoff (R factor – USLE). The number of rainfall erosion index units, plus a factor for runoff from snowmelt or applied water where such runoff is significant. [AH-537]

Rangeland. A *Land cover/use* category on which the climax or potential plant cover is composed principally of native grasses, grasslike plants, forbs or shrubs suitable for grazing and browsing, and introduced forage species that are managed like rangeland. This would include areas where introduced hardy and persistent grasses, such as crested wheatgrass, are planted and such practices as deferred grazing, burning, chaining, and rotational grazing are used, with little or no chemicals or fertilizer being applied. Grasslands, savannas, many wetlands, some deserts, and tundra are considered to be rangeland. Certain communities of low forbs and shrubs, such as mesquite, chaparral, mountain shrub, and pinyon-juniper, are also included as rangeland. [NRI-97]

Remote sensing. The science and art of obtaining information about an object, area, or phenomenon through the analysis of data acquired by a device that is not in contact with the object, area, or phenomenon under investigation. [RS&I]

Reservoir. A pond, lake, basin, or other space, created in whole or in part by the building of engineering structures, that is used for the storage, regulation, and control of water. [NRI-97]

Ridge roughness (K factor – WEQ). A measure of the effect of ridges made by tillage and planting implements. It is expressed as a decimal from 0.5 to 1.0. [NAM– -88]

- Ridges, especially those at right angles to the prevailing wind direction, absorb and deflect wind energy and trap moving soil particles. See Wind erosion equation (WEQ).

River wash. A subcategory of *Barren land*. Barren alluvial areas, usually coarse-textured, exposed along streams at low water and subject to shifting during normal high water. [SSSA]

Row crops. A subset of the *Land cover/use* category *Cropland* (subcategory, Cultivated) comprising land in row crops, such as corn, soybeans, peanuts, potatoes, sorghum, sugar beets, sunflowers, tobacco, vegetables, and cotton. [NRI-97]

Rural transportation land. A *Land cover/use* category which consists of all highways, roads, railroads and associated rights-of-way outside *urban and built-up areas*; also includes private roads to *farmsteads or ranch headquarters*, logging roads, and other private roads (field lanes are not included). [NRI– 92]

S factor. See Slope-steepness factor.

Saline deposits. Precipitated salt crusts or crystals found in or on the soil surface that result in reduced vegetative production or in the elimination of crops and grasses on agricultural lands. [NRI-97]

Salt flats. Undrained areas in closed basins in arid regions. In these areas, 10 to 75 cm (4 to 30 in) of crystalline salt overlies stratified, very strongly saline sediment. The water table may be within 20 cm (8 in) of the surface at some period during the year. [SSSA]

Sample point. The second-stage sample unit in the NRI two-stage sampling scheme. See also *Primary sample unit*. [NRI-92]

Sand dunes. A *Land cover/use* subcategory under *Barren land*. A sand area with less than 5 percent *vegetative cover*. An accumulation of loose sand heaped by the wind, commonly found along low-lying seashores above high-tide level, more rarely on the border of large lakes or river

valleys, as well as in various desert regions, where there is abundant dry surface sand during some part of the year (*Glossary of Geology*, American Geological Institute). [NRI-92]

Sheet and rill erosion. The removal of layers of soil from the land surface by the action of rainfall and runoff. It is the first stage in water erosion. [NAM-88]

Short woody plants. A *General cover* category consisting of short woody canopy cover of greater than 25 percent, while tall woody canopy cover is less than 25 percent. Short woody plants are less than 4 meters (about 13 feet) tall and often multi-stemmed, e.g., shrubs and seedlings. The distinction between tall (>4m) and short (<4m) is made according to current conditions, not potential. [NRI-97]

Slope. The inclination of the soil surface from the horizontal. Slope percent is the vertical distance divided by the horizontal distance, then multiplied by 100. [NSSH-96]

Slope length. The distance from the point of origin of overland flow to the point where either the slope gradient decreases enough that deposition begins, or the runoff water enters a well-defined channel that may be part of a drainage network or a constructed channel. [AH-537] For the NRI, length of slope is taken through the *sample point*.

Slope-length factor (L factor – USLE). The ratio of soil loss from the field slope length to that from a 72.6-foot length under identical conditions. [AH-537]

Slope-steepness factor (S factor – USLE). The ratio of soil loss from the field slope gradient to that from a 9 percent slope under otherwise identical conditions. Used in *Universal soil loss equation* (USLE) calculations of *sheet and rill erosion*. [AH-537]

Small built-up areas. A *Land cover/use* category consisting of developed land units of 0.25 to 10 acres, which meet the definition of *Urban and built-up areas*. [NRI-92]

Small streams. *Perennial streams* less than 1/8 mile (660 feet) wide. [NRI-97]

Small water bodies. Inland bodies of water with a water surface area of less than 40 acres. [NRI-97]

Soil erodibility factor (K factor – USLE). An erodibility factor which quantifies the susceptibility of soil particles to detachment and movement by water. This factor is used in the *Universal soil loss equation* (USLE) to calculate soil loss by water. [SSURGO-95]

Soil erodibility index (I factor – WEQ). The potential soil loss, in tons per acre per year, from a wide, level, unsheltered, isolated field with a bare, smooth, loose, and noncrusted surface, under climatic conditions like those in the vicinity of Garden City, Kansas. [NAM-88]

Soil loss tolerance factor (T factor – USLE). The maximum rate of annual soil loss that will permit crop productivity to be sustained economically and indefinitely on a given soil. [NAM-88]

Soil survey. The systematic examination, description, classification, and mapping of soils in an area. The USDA– NRCS Soil Survey Program produces Soil Survey Reports, which generally consist of four principal parts: (1) maps, (2) a map legend, (3) a description of the soils in the survey area, and (4) a use and management report. The survey area commonly is a single county but may comprise parts of counties, physiographic regions, or other management areas. [National Soil Survey Handbook (NSSH), revised, 1996]

Stream. A flow of water in a channel or bed, as a brook, rivulet, or small river. [NRI-97]

T factor (USLE). See *Soil loss tolerance factor*.

Tall woody plants. A *General cover* category consisting of tall woody canopy cover of greater than 25 percent. Tall plants are 4 meters (about 13 feet) or more tall, usually single-stemmed trees. The distinction between tall (> 4m) and short (< 4m) is made according to current conditions, not potential. Thus, a 3-meter-tall Douglas-fir is a short woody plant. [NRI-97]

Universal soil loss equation (USLE). An erosion model designed to predict the long-term average soil losses in runoff from specific field areas in specified cropping and management systems. [AH-537]

The equation is: $A = RKLSCP$

where	A	=	Computed soil loss per unit area
	R	=	<i>Rainfall and runoff</i> factor
	K	=	<i>Soil erodibility</i> factor
	L	=	<i>Slope-length</i> factor

S	=	<i>Slope-steepness</i> factor
C	=	<i>Cover and management</i> factor
P	=	Support <i>practice</i> factor

The NRI calculations use location-specific data for the field in which the NRI *sample point* falls or that portion of the field surrounding the point that would be considered in conservation planning.

Unsheltered distance (L factor – WEQ). The unsheltered distance along the prevailing wind erosion direction across the field or area to be evaluated. [NAM-88]

- For NRI the unsheltered distance is expressed in feet, measured through the *sample point*, parallel to the prevailing wind direction during the critical wind erosion period. [NRI-97]

Urban and built-up areas. A *Land cover/use* category consisting of residential, industrial, commercial, and institutional land; construction sites; public administrative sites; railroad yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment plants; water control structures and spillways; other land used for such purposes; small parks (less than 10 acres) within urban and built-up areas; and highways, *railroads*, and other transportation facilities if they are surrounded by urban areas. Also included are tracts of less than 10 acres that do not meet the above definition but are completely surrounded by Urban and built-up land. Two size categories are recognized in the NRI: areas of 0.25 acre to 10 acres, and areas of at least 10 acres. [NRI-92]

V factor. See Vegetative cover.

Vegetative cover (V factor – WEQ). The effect of vegetative cover in the *Wind erosion equation* is expressed by relating the kind, amount, and orientation of vegetative material to its equivalent in pounds per acre of small grain residue in reference condition (small grain equivalent). [NAM-88]

Water. A *General cover* category consisting of permanent water, such as a *perennial stream*, *lake*, or pond with at least 25 percent open water. If the vegetative canopy obscures more than 75 percent of the water surface from view, the area is recorded under the category appropriate for the canopy vegetation. Four types of water areas are *large streams*, *large water bodies*, *small streams*, and *small water bodies*. [NRI-97]

Water areas. A *Land cover/use* category comprising water bodies and streams that are permanent open water. [NRI-97]

Water body. A type of (permanent open) water area that includes ponds, *lakes*, reservoirs, bays or gulfs, and estuaries. There are three size categories: less than 2 acres, 2 to 40 acres, and at least 40 acres. [NRI-92]

Water spreading. Diverting or collecting runoff from natural channels, gullies, or streams with a system of dams, dikes, ditches, or other means, and spreading it over a relatively flat area. [NHCP]

Wind erodibility group (WEG). A grouping of soils that have similar properties affecting their resistance to wind erosion. [NAM-88]

Wind erosion. The process of detachment, transport, and deposition of soil by wind. [NAM– 88]

Wind erosion equation (WEQ). An erosion model designed to predict long-term average annual soil losses from a field having specific characteristics. [NAM-88]

The equation is: $E = f(IKCLV)$

where	E	=	Estimated average annual soil loss expressed in tons per acre per year
	I	=	<i>Soil erodibility index</i>
	K	=	<i>Soil ridge roughness</i> factor
	C	=	<i>Climatic</i> factor
	L	=	Equivalent <i>unsheltered distance</i> across the field along the prevailing
wind			erosion direction
	V	=	Equivalent <i>vegetative cover</i>

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