

Land Use/Land Cover Categories and Definitions

Background

NRCS relies on land use designations to help customize and clarify a conservation plan. Conservation planners reference land use to provide a consistent frame of reference when assessing site conditions and developing alternative conservation systems. Additionally, land use designations support other NRCS functions such as: nationwide resource inventories, watershed-level assessments, program ranking and funding decisions, and modeling / analysis efforts, e.g. CEAP.

The National Planning Procedures Handbook (NPPH) recognizes land use in its description of NRCS' planning process and associated outputs. The NPPH defines land use as *“a term used by NRCS to identify the intent of the client with regard to the purpose to which a land unit is to be put. The two designations of land use are the official NRCS designation and the client land use designation agreed-to by the client and planner.”*

Potentially, there is a discrepancy between the land use the client references and the official land use that NRCS assigns to the planning area under consideration. To standardize land use designation, clients and planners must use the same designations. This will promote consistency for both planners and clients.

Land use management directly affects resource conditions and capabilities. By knowing the client's land use designation, planners are provided with a resource conservation framework that enables them to proceed with assessments, analysis, alternative formulation, and client interaction using a common language. NRCS relies on accurate land use designations for capturing progress, collaborating with partners and assessing impacts of conservation treatments at both field and watershed levels.

Land Use/Land Cover Levels

CDSI has developed a tiered land use/land cover hierarchy that can be used effectively by planners and modelers at the field and landscape level. The need to associate what is specifically being grown on the land is needed to run assessment tools and models in the future. Land Use/Land covers will be integrated as much as possible with assessment tools such as APEX, RUSLE II and NASS for example so one simplified Land Cover list can be used as appropriate in the future.

The proposed changes are sensitive to legacy land use descriptions; however, unclear or competing land use designations have been removed. The landuse classification introduces the use of a land use modifier to more accurately define the land's actual management. For example, wildlife is eliminated as a land use, but it can be used as a modifier when a land use, such as forest, is actively managed for wildlife.

Because what is grown within a land use is needed to run assessment tools and models in the future, NRCS is adopting the portions of the Federal Geographic Data Committee (FGDC) land cover system that are needed for conservation planning.

NRCS will use a land use/land cover level hierarchy consisting of up to four (4) land cover levels associated with each land use. At a minimum, planners will designate a land use and land cover level three (3).

Modifiers

Because it is impractical to include all specific land uses in NRCS' service area, land use designations will be supplemented with "modifiers". Modifiers provide another level of specificity and in some instances help denote what the land is actually managed for. The proposed modifiers are:

1. **Irrigated** – applied when an operational system is present and managed to supply water
2. **Wildlife** – applied when the client is actively managing for wildlife and this management is reflected in the conservation plan through the application of practices that are beneficial to wildlife
3. **Grazed** – applied when grazing animals impact how land is managed and influence the conservation plan

The following land use designations are proposed by CDSI. For comparison, the table includes land use designations from efforts outside of NRCS conservation planning activities (NRI & APEX). Additionally, the Farm Service Agency (FSA) list is included because many NRCS clients participate with FSA on production lands.

NPPH Land Use (12/2006)	New Land Use	APEX	NRI	FSA	Comments
Crop	Crop	Cropland	Cropland	Cropland	
Forest	Forest	Forestland	Forestland	Forest	
Grazed Range	Range	Rangeland	Rangeland	Rangeland	
Grazed Forest					Covered by Forest with Grazed modifier
Hay		Pasture & Hayland	Non-cultivated Cropland		Covered under Cropland Land Covers
Pasture	Pasture	Pasture & Hayland	Pastureland		
Mined				Mined	Covered by Other Rural Lands
Native / Naturalized Pasture					Covered by Pasture or Range
Natural Area	Designated Protected Area				
Headquarters	Farmsteads				
Recreation					
Urban	Developed Land	Urban/Built-up Land	Developed Land	Urban	
Water	Water		Water Areas	Water Body	
Watershed Protection					
Wildlife					Wildlife is now a modifier
	Associated Ag Land			Other Agricultural	
	Other Rural Land	Barren and Other Rural Land	Other Rural Land		

Land Use Definitions:

Land use: The purpose of human activity on the land; it is usually, but not always, related to land cover (from the NRI glossary). (See the table below for land use definition)

An examination of recent (FY2010) National Conservation Planning Database metrics indicates over 95% of all NRCS land use designations are currently associated with five categories: Crop, Pasture, Range, Hay (included in cropland), and Forest

Crop: Land used primarily for the production and harvest of annual or perennial field, forage, food, fiber, horticultural, orchards, vineyards and/or energy crops.

Pasture: Lands composed of introduced or domesticated native forage species that is used primarily for the production of livestock. They receive periodic renovation and/or cultural treatments, such as tillage, fertilization, mowing, weed control, and may be irrigated. They are not in rotation with crops.

Range: Land used primarily for the production of grazing animals. Includes native plant communities and those seeded to native or introduced species, or naturalized by introduced species, that are ecologically managed using range management principles.

Forest: Land on which the primary vegetation is tree cover (climax, natural or introduced plant community) and use is primarily for production of wood products and/or non-timber forest products.

Other Rural Land: Land that is barren, sandy, rocky or that is impacted by the extraction of natural resources such as minerals, gravel/sand, coal, shale, rock, oil or natural gas.

Associated Ag Land: Land associated with farms and ranches that are not purposefully managed for food, forage or fiber and are typically associated with nearby production and/or conservation lands. This could include incidental areas such as: idle center pivot corners, odd areas, ditches and watercourses, riparian areas, field edges, seasonal and permanent wetlands, and other similar areas.

Farmsteads: Land used for facilities and supporting infrastructure where farming, forestry, animal husbandry and ranching activities are often initiated. This may include dwellings, equipment storage plus farm input and output storage and handling facilities. Also includes land dedicated to the facilitation and production of high intensity animal agriculture in a containment facility where daily nutritional requirements are obtained from other lands or feed sources.

Water: Geographic area whose dominant characteristic is open water/permanent ice or snow. May include intermingled land, including tidal influenced coastal marsh lands.

Developed Land: Land occupied by buildings and related facilities used for residences, commercial sites, public highways, airports, and open space associated with towns and cities.

Designated Protected Area: Land or water used for the preservation, protection, and observation of the existing resources, archaeological or historical interpretation, resource interpretation, or for aesthetic value. These areas are officially designated by legislation or other authorities. Examples: legislated natural or scenic areas and rural burial plots.

Examples

Cropland

Land Use	Cover 1	Cover 2	Cover 3	Cover 4	Plant Symbol
Crop	Corn	N/A	Corn, silage		
Crop	All other close grown crops	Crops Grown for Seed	Bermudagrass, seed		
Crop	All other close grown crops	Herbs-Seasonings	Sage		
Crop	Hayland	Grass	Bermudagrass	Coastal	
Crop	Hayland	Grass	Bluestem	Big	

Pastureland

Land Use	Cover 1	Cover 2	Cover 3	Cover 4	Plant Symbol
Pasture	Grass	C3 mid-tall, bunchgrass, fibrous	Fescue	Tall	
Range	Grass	C3 mid-tall, bunchgrass, fibrous	Wheatgrass	Bluebunch	

Landuse Cover Linkage to other Applications

NRCS Land Use	Cover 1	Cover 2	Cover 3	Cover 4	FGDC Level 6	FGDC Level 7	RUSLE II Veg Name	WEPS	APEX Full Name	APEX ID
Crop	Corn	N/A	Corn, silage	N/A	Corn (011)	Corn for silage	Corn, silage	Corn, silage	Corn Silage	5
Crop	Corn	N/A	Corn, decorative	N/A	Corn (011)	Decorative Corn	Corn, pop	N/A	Indian Corn	188
Crop	Corn	N/A	Corn, field	N/A	Corn (011)	Field Corn	Corn, grain	Corn, grain	N/A	N/A
Crop	Corn	N/A	Corn, grain	N/A	Corn (011)	Grain Corn	Corn, grain	Corn, grain	Corn Grain	6
Crop	Corn	N/A	Corn, pop	N/A	Corn (011)	Popcorn	Corn, pop	Corn, pop	Popcorn	19
Crop	Corn	N/A	Corn, seed	N/A	Corn (011)	Seed Corn	Corn, seed	Corn, seed	Corn Seed	38
Crop	Corn	N/A	Corn, Sweet	N/A	Corn (011)	Sweet Corn	Corn, sweet	Corn, sweet	Sweet Corn Fresh	510
Crop	Corn	N/A	Corn, Sweet	N/A	Corn (011)	Sweet Corn	Corn, sweet	Corn, sweet	Sweet Corn Processed	610