

Land Use / Soil Type Lookup

The following tables provide examples of Land Use categories and Curve Number lookup tables. The Land Use categories are from the USGS User's Manual for Land Use and Land Cover Digital Data from 1:250,000 and 1:100,000 Scale Maps. The Curve Number Lookup table is from McCuen's Hydrologic Analysis and Design text.

Table 1.--U.S. Geological Survey Land Use and Land Cover Classification System for Use with Remote Sensor Data

LEVEL I	LEVEL II
1 Urban or Built-up Land	11 Residential
	12 Commercial and Services
	13 Industrial
	14 Transportation, Communications and Utilities
	15 Industrial and Commercial Complexes
	16 Mixed Urban or Built-up Land
	17 Other Urban or Built-up Land
2 Agricultural Land	21 Cropland and Pasture
	22 Orchards, Groves, Vineyards, Nurseries, and Ornamental Horticultural Areas
	23 Confined Feeding Operations
	24 Other Agricultural Land
3 Rangeland	31 Herbaceous Rangeland
	32 Shrub and Brush Rangeland
	33 Mixed Rangeland
4 Forest Land	41 Deciduous Forest Land
	42 Evergreen Forest Land
	43 Mixed Forest Land
5 Water	51 Streams and Canals
	52 Lakes
	53 Reservoirs
	54 Bays and Estuaries
6 Wetland	61 Forested Wetland
	62 Nonforested Wetland
7 Barren Land	71 Dry Salt Flats
	72 Beaches
	73 Sandy Areas Other than Beaches
	74 Bare Exposed Rock
	75 Strip Mines, Quarries, and Gravel Pits
	76 Transitional Areas
	77 Mixed Barren Land
8 Tundra	81 Shrub and Brush Tundra
	82 Herbaceous Tundra
	83 Bare Ground
	84 Wet Tundra
	85 Mixed Tundra
9 Perennial Snow or Ice	91 Perennial Snowfields
	92 Glaciers

TABLE 7-6 Runoff curve numbers (average watershed condition, $I_a = 0.2S$)

Land Use Description	Curve Numbers for Hydrologic Soil Group			
	A	B	C	D
Fully developed urban areas^a (vegetation established)				
Lawns, open spaces, parks, golf courses, cemeteries, etc.				
Good condition; grass cover on 75% or more of the area	39	61	74	80
Fair condition; grass cover on 50% to 75% of the area	49	69	79	84
Poor condition; grass cover on 50% or less of the area	68	79	86	89
Paved parking lots, roofs, driveways, etc.	98	98	98	98
Streets and roads				
Paved with curbs and storm sewers	98	98	98	98
Gravel	76	85	89	91
Dirt	72	82	87	89
Paved with open ditches	83	89	92	93
		Average % impervious ^b		
Commercial and business areas	85	89	92	94
Industrial districts	72	81	88	91
Row houses, town houses, and residential with lot sizes 1/8 acre or less	65	77	85	90
Residential: average lot size				
1/4 acre	38	61	75	83
1/3 acre	30	57	72	81
1/2 acre	25	54	70	80
1 acre	20	51	68	79
2 acre	12	46	65	77
Developing urban areas^c (no vegetation established)				
Newly graded area	77	86	91	94

TABLE 7-6 Runoff curve numbers (continued)

Land Use	Cover	Treatment of Practice	Hydrologic Condition ^a	Curve Numbers for Hydrologic Soil Group					
				A	B	C	D		
Cultivated agricultural land									
Fallow		Straight row	Poor	77	86	91	94		
		Conservation tillage	Good	76	85	90	93		
Row crops		Conservation tillage	Good	74	83	88	90		
		Straight row	Poor	72	81	88	91		
Small grain		Straight row	Good	67	78	85	89		
		Conservation tillage	Poor	71	80	87	90		
		Conservation tillage	Good	64	75	82	85		
		Conservation tillage	Poor	70	79	84	88		
		Conservation tillage	Good	65	75	82	86		
		Conservation tillage	Poor	69	78	83	87		
		Conservation tillage	Good	64	74	81	85		
		Conservation tillage	Poor	66	74	80	82		
		Conservation tillage	Good	62	71	78	81		
		Conservation tillage	Poor	65	73	79	81		
		Conservation tillage	Good	61	70	77	80		
		Conservation tillage	Poor	65	76	84	88		
Close-seeded legumes or rotation meadow ^b		Straight row	Good	63	75	83	87		
		Conservation tillage	Poor	64	75	83	86		
		Conservation tillage	Good	60	72	80	84		
		Conservation tillage	Poor	63	74	82	85		
		Conservation tillage	Good	61	73	81	84		
		Conservation tillage	Poor	62	73	81	84		
		Conservation tillage	Good	60	72	80	83		
		Conservation tillage	Poor	61	72	79	82		
		Conservation tillage	Good	59	70	78	81		
		Conservation tillage	Poor	60	71	78	81		
		Conservation tillage	Good	58	69	77	80		
		Noncultivated agricultural land		Straight row	Poor	66	77	85	89
Straight row	Good			58	72	81	85		
Conservation tillage	Poor			64	75	83	85		
Conservation tillage	Good			55	69	78	83		
Conservation tillage	Poor			63	73	80	83		
Conservation tillage	Good			51	67	76	80		
Pasture or range				No mechanical treatment	Poor	68	79	86	89
				No mechanical treatment	Fair	49	69	79	84
				No mechanical treatment	Good	39	61	74	80
				No mechanical treatment	Poor	47	67	81	88
				No mechanical treatment	Fair	25	59	75	83
				No mechanical treatment	Good	6	35	70	79
Meadow				30	58	71	78		

TABLE 7-6 Runoff curve numbers (continued)

Land Use	Cover	Treatment of Practice	Hydrologic Condition ^a	Curve Numbers for Hydrologic Soil Group			
				A	B	C	D
Forestland - grass or orchards--evergreen or deciduous			Poor	55	73	83	86
			Fair	44	65	76	82
			Good	32	58	72	79
Brush			Poor	48	67	77	83
			Good	20	48	65	73
Woods			Poor	45	66	77	83
			Fair	36	60	73	79
			Good	25	55	70	77
Farmsteads			59	74	82	86
Forest--range			Poor	79	86	92	
			Fair	71	80	89	
Herbaceous			Good	61	74	84	
Oak--aspen			Poor	65	74		
			Fair	47	57		
Juniper--grass			Good	30	41		
Sage-grass			Poor	72	83		
			Fair	58	73		
			Good	41	61		
Sage-grass			Poor	67	80		
			Fair	50	63		
			Good	35	48		

^a For land uses with impervious areas, curve numbers are computed assuming that 100% of runoff from impervious areas is directly connected to the drainage system. Pervious areas (lawn) are considered to be equivalent to lawns in good condition and the impervious areas have a CN of 98.

^b Includes paved streets.

^c Use for the design of temporary measures during grading and construction. Impervious area percent for urban areas under development vary considerably. The user will determine the percent impervious. Then using the newly graded area (CN and Fig. 2-2 or 2-3, the composite CN can be computed for any degree of development.

^d For conservation tillage poor hydrologic condition, 5 to 20% of the surface is covered with residue (less than 750-lb/acre row crops or 300-lb/acre small grain).

For conservation tillage good hydrologic condition, more than 20% of the surface is covered with residue (greater than 750-lb/acre row crops or 300-lb/acre small grain).

^e Close-drilled or broadcast.

For noncultivated agricultural land:

Poor hydrologic condition has less than 25% ground cover density.

Fair hydrologic condition has between 25 and 50% ground cover density.

Good hydrologic condition has more than 50% ground cover density.

For forest--range:

Poor hydrologic condition has less than 30% ground cover density.

Fair hydrologic condition has between 30 and 70% ground cover density.

Good hydrologic condition has more than 70% ground cover density.