

Summary Table: Characteristics of Ecoregions of Iowa and Missouri

39. OZARK HIGHLANDS

Level IV Ecoregion	Physiography	Geology	Soil					Climate			Potential Natural Vegetation	Land Use and Land Cover
			Order (Great Groups)	Common Soil Series	Temperature/Moisture Regimes	Precipitation (Mean annual (inches))	Frost Free (Mean annual (days))	Mean Temperature (January minimum; July maximum; °F)				
39a. Springfield Plateau	4933 Gently sloping to irregular plain. Karst features. Perennial spring-fed streams.	800-1700 / 50-150 Cherty clay solution residuum and areas of thin loess. Mississippian cherty limestone.	Ultisols (Paleudals, Frigidudals, Alfisols (Fragiudals, Hapludals, Paleudalfs) Inceptisols (Dystrudepts)	Clarkville, Goss, Doniphan, Viraton, Wilderness, Scholten, Toni, Hector, Kerns, Credon, Hobeg, Bolivar	Mesic/ Udic	26-46; 100-200	40-42	150-180	26-46; 66-90	Big bluestem/Indiangrass prairie, post-blackjack oak woodland and white-black oak forest.	Mix of woodland, pastureland and limited cropland. Historical lead and zinc mining. Urban and suburban at Springfield and Joplin.	
39b. Elk River Hills	540 Dissected hills, entrenched valleys and areas ranging from rolling, irregular hills to steep slopes. Karst features. Dendritic, deeply entrenched streams.	900-1400 / 200-300 Cherty clay solution residuum and areas of thin loess. Mississippian cherty limestone, with some Devonian, shales (Chattanooga) and limestone, a few windows of Ordovician dolomite in valleys.	Ultisols (Paleudals, Frigidudals, Hapludals) Alfisols (Paleudalfs)	Clarkville, Noark, Nixa, Goss, Doniphan, Toni	Mesic/ Udic	26-46; 100-200	41-42	130-180	27-47; 66-90	Post-blackjack oak woodland, post-black oak woodland, and white-black oak forest.	Forestry, recreation and poultry farms.	
39c. White River Hills	3512 Dissected hills and entrenched valleys. Steep slopes and narrow valleys. Karst features. Dendritic, deeply entrenched streams.	600-1600 / 200-600 Thin cherty clay solution residuum in the west and very thin cherty siltly to sandy clay solution residuum in the east. Ordovician dolomite, with some Ordovician sandstone, Mississippian limestone on ridgetops. Glades are Ordovician limestone or dolomite.	Ultisols (Paleudals, Frigidudals, Hapludals) Alfisols (Paleudalfs)	Mano, Capitna, Clarkville, Doniphan, Nixa, Arkansas, Moko, Gassville, Ocie, Bardsley	Mesic/ Udic	26-46; 100-200	42-44	150-180	25-48; 66-90	Little bluestem-sideoats alkaline glade, post-blackjack oak woodland, white-black oak forest.	Forestry and recreation. Pastureland in eastern half.	
39d. Central Plateau	6820 Irregular plains with broad summits and moderately steep valleys. Karst features are extensive with large sinkhole areas. Intermittent headwater streams, sinkholes, ponds.	800-1600 / 50-150 Thin to thick cherty siltly to sandy clay solution residuum and large areas of thin loess. Ordovician dolomite, some outcrops, Mississippian-aged limestone in the western area. Pennsylvanian shales and clays in areas with less relief.	Ultisols (Paleudals, Frigidudals, Hapludals) Alfisols (Fragiudals, Hapludalfs, Paleudalfs) Mollisols (Hapludalfs)	Viraton, Clarkville, Lebanon, Goss, Doniphan, Arkansas, Moko, Gassville, Gepp, Agnos, Capitna, Union	Mesic/ Udic	26-46; 100-200	40-44	150-180	24-46; 66-90	Little bluestem/Indiangrass prairie, post-blackjack oak woodland, and black-scarlet oak woodland.	Pastureland, forestry, and limited cropland with main crops of forage and feed grains for livestock. Fire clay production.	
39e. Osage/Gasconade Hills	5040 Moderately dissected hills. Steep slopes and narrow valleys. Karst features. Dendritic spring-fed perennial streams.	600-1100 / 150-300 Thin to very thick cherty clay decomposition and solution residuum. Ordovician dolomite with some sandstone (Gasconade Formation), sandstone (Roubidoux Formation), and dolomite (Jefferson City-Cotter Formation). Some scattered Mississippian limestone in the west.	Ultisols (Paleudals, Frigidudals, Hapludals) Alfisols (Hapludalfs) Mollisols (Hapludalfs)	Barleye, Goss, Gasconade, Clarkville, Doniphan, Backlick, Caneyville, Gatewood, Capitna, Niangua	Mesic/ Udic	26-46; 100-200	38-42	150-180	23-45; 67-91	Mainly post-blackjack oak woodland to the north with white-black oak forest, white oak forest, and an increase in sheltered pine-oak forest to the south.	Forestry, recreation and pastureland.	
39f. St. Francis Knobs and Basins	1590 Sleep, irregular hills, bedrock knobs and intervening basins. Small rivers and perennial streams.	600-1700 / 300-1000 Silty clay loam decomposition and solution residuum mantled with thin loess. Areas of sandy silt saprotic. Precambrian granite, rhyolite, and intermediate rocks. Cambrian dolomites and some sandstones in basins.	Ultisols (Hapludals, Frigidudals, Paleudalfs) Alfisols (Hapludalfs)	Irontada, Killraree, Delassus, Crider, Fourche, Backlick, Synotic, Clarkville, Wilderness, Capitna	Mesic/ Udic	26-46; 100-200	40-44	120-150	25-45; 64-91	Post-blackjack oak woodland with little bluestem prairie and glade areas in valleys and basins.	Forestry in timbered areas and pastureland and grazing in valleys and basins. Historically, areas of extensive lead mining along with associated copper, silver, cobalt, and zinc mining.	
39g. Meramec River Hills	1776 Hills and entrenched valleys. Steep slopes, narrow ridges, and narrow valleys. Karst features. Dendritic spring-fed perennial streams.	500-1300 / 150-300 Thin to thick sandy clay decomposition and solution residuum and thick silty clay and clayey silt solution residuum with loess. Alternating layers of Pennsylvanian sandstone and sandstone. Some scattered exposures of Precambrian igneous rocks.	Ultisols (Paleudals, Frigidudals, Hapludals) Alfisols (Paleudalfs)	Goss, Doniphan, Wilderness, Capitna, Coulstone, Hobson, Reuter	Mesic/ Udic	26-46; 100-200	38-42	130-160	24-45; 65-90	Shortleaf pine-oak forest, black-scarlet oak woodland and forest, and white oak forest.	Forestry and recreation with areas of iron and barite mining.	
39h. Current River Hills	3114 Hills and entrenched valleys. Steep slopes, narrow ridges, and narrow valleys. Karst features. Dendritic, deeply entrenched, spring-fed perennial streams.	400-1300 / 200-400 Thin to thick sandy clay decomposition and solution residuum and thick silty clay and clayey silt solution residuum. Ordovician and Cambrian dolomite and sandstone. Some scattered exposures of Precambrian igneous rocks.	Ultisols (Paleudals, Frigidudals, Hapludals) Alfisols (Paleudalfs)	Clarkville, Goss, Doniphan, Capitna, Macdonata, Gepp, Toni	Mesic/ Udic	26-46; 100-200	42-45	130-160	26-46; 64-90	Shortleaf pine-oak forest, black-scarlet oak woodland and forest, and white oak forest.	Forestry and recreation with some areas of lead, zinc, copper, and manganese mining.	
39i. Eastern Ozark Border	1835 Moderately dissected hills and bluffs. Some karst features. Dendritic, entrenched perennial streams.	500-1100 / 150-300 Thin cherty clay decomposition and solution residuum and thin to moderate loess mantle on uplands. Ordovician dolomite with some sandstone Mississippian limestone.	Ultisols (Paleudals, Hapludals) Alfisols (Hapludalfs, Paleudalfs)	Backlick, Caneyville, Gatewood, Hildebrecht, Weingarten, Goss, Lily, Minnith, Jomca, Loring, Poyner, Weingarten	Mesic/ Udic	26-46; 100-200	38-44	130-160	25-44; 66-91	Little bluestem-sideoats alkaline glade, post-black jack oak woodland, and white-black oak woodland.	Pastureland, woodland, and limited cropland with hay and forage crops.	
39j. Black River Hills	1076 Broad, flat inter-stream divides and moderately dissected hills. Karst features. Perennial streams and local riverine wetlands.	300-900 / 100-300 Thick cherty sandy clay decomposition and solution residuum and thick cherty clay solution residuum. Thin loess mantle on less dissected areas. Ordovician dolomite and sandstone.	Ultisols (Paleudals, Frigidudals) Alfisols (Fragiudalfs)	Clarkville, Wilderness, Capitna	Mesic/ Udic	26-46; 100-300	44-46	130-160	26-46; 66-92	Shortleaf pine-oak woodland, post-blackjack oak woodland, and mixed oak-sweetgum forest.	Forestry, pastureland, and recreation.	
39k. Prairie Ozark Border	839 Smooth to gently sloping plains. Intermittent headwater streams.	800-1100 / 50-100 Thin to moderate loess mantle. Thin cherty clay solution residuum and thin cherty siltly to sandy clay decomposition and solution residuum. Ordovician dolomite and sandstone to the south, and Mississippian limestone to the north. Some areas of Devonian shale and sandstone.	Ultisols (Hapludalfs) Inceptisols (Eutrudpts)	Menfro, Winfield, Haymond	Mesic/ Udic	26-46; 100-200	38-40	150-180	26-42; 68-91	Big bluestem-Indiangrass prairie, bluestem-Indiangrass prairie, and post-blackjack woodland.	Cropland with hay and forage crops, and pastureland.	

40. CENTRAL IRREGULAR PLAINS

Level IV Ecoregion	Physiography	Geology	Soil					Climate			Potential Natural Vegetation	Land Use and Land Cover
			Order (Great Groups)	Common Soil Series	Temperature/Moisture Regimes	Precipitation (Mean annual (inches))	Frost Free (Mean annual (days))	Mean Temperature (January minimum; July maximum; °F)				
40a. Loess Flats and Till Plains	16976 Glaciated. Low hills and smooth plains. Perennial streams with many channelized.	600-1200 / 100-300 Moderate loess over loamy till and clay loam tills. Pennsylvanian sandstone, limestone, shale. Also Mississippian limestone in Iowa.	Mollisols (Argiudolls, Hapludolls) Alfisols (Hapludalfs, Epiaqualfs)	Lanoni, Shelby, Adair, Grundy, Lagonda, Armorer, Sneed, Gura, Armstrong, Pershing, Shelby, Kilwinning, Goss	Mesic/ Udic	26-46; 100-300	32-36	150-180	16-36; 66-90	Mosaic of little bluestem-sideoats grama prairie, bur-oak woodland, and chinquapin oak woodland.	Cropland. Corn, soybeans, other feed grains, and hay are principal crops. Historic coal mining. Woodlands along stream reaches, especially in the Chariton Hills area.	
40c. Wooded Osage Plains	3824 Unglaciated. Low cuestas and gentle undulating plains. Intermittent and perennial streams, some channelized.	700-1100 / 75-150 Sandy clay, silty clay, and clay decomposition residuum. Alternating layers of Pennsylvanian sandstone, limestone, and shale.	Mollisols (Argiaquolls, Argudolls, Hapludolls) Alfisols (Epiaqualfs) Entisols (Ultifluvents, Fluvaquents)	Sampeel, Polo, Sneed, Hartwell, Kenora, Deepwater, Pershing, Greenwood, Dickey	Mesic, Thermic/ Udic	26-46; 100-300	36-40	150-180	22-42; 68-92	Little bluestem-sideoats grama prairie, big bluestem-Indiangrass prairie, cordgrass wet prairie, and oak woodlands.	Pasture, cropland, and areas of coal mining. Winter wheat, soybeans, corn, grain sorghum, other feed grains, and hay are the major crops.	
40d. Cherokee Plains	2509 Unglaciated. Smooth to irregular plains. Intermittent and perennial streams.	700-1000 / 50-125 Clay and sandy decomposition residuum. Alternating layers of Pennsylvanian sandstone, limestone, and shale.	Alfisols (Albaqualfs, Hapludalfs) Alfisols (Hapludalfs) Mollisols (Argiudolls, Hapludolls) Inceptisols (Dystrudepts)	Parsons, Barden, Dennis, Hector, Bolivar, Mandeville, Barco, Collinsville	Mesic, Thermic/ Udic	26-46; 100-300	38-40	150-180	24-45; 68-92	Little bluestem-sideoats grama prairie, big bluestem-Indiangrass prairie, and cordgrass wet prairie.	Pasture, cropland, and areas of coal mining. Winter wheat, soybeans, corn, grain sorghum, other feed grains, and hay are the major crops.	
40e. Claypan Prairie	4129 Glaciated. Smooth plains. Perennial streams with many channelized.	700-1000 / 50-100 Loamy till and clay loam till. Well-developed claypan. Pennsylvanian sandstone, limestone, and shale.	Alfisols (Albaqualfs, Albuqualfs, Hapludalfs)	Mexico, Putnam, Leonard, Armstrong, Lindley	Mesic/ Udic	26-46; 100-300	36-38	150-170	18-38; 66-90	Big bluestem-Indiangrass prairie, little bluestem-sideoats grama prairie, and white oak dry woodland.	Cropland, pasture, and livestock production, especially hogs. Corn, soybeans, other feed grains, and hay for livestock are the major crops.	

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47. WESTERN CORN BELT PLAINS

Level IV Ecoregion	Physiography	Geology	Soil					Climate			Potential Natural Vegetation	Land Use and Land Cover
			Order (Great Groups)	Common Soil Series	Temperature/Moisture Regimes	Precipitation (Mean annual (inches))	Frost Free (Mean annual (days))	Mean Temperature (January minimum; July maximum; °F)				
47a. Northwest Iowa Loess Prairies	4385 Irregular plains. Dendritic streams.	1200-1600 / 100-200 Moderate to thick loess over clay-loam till. Cretaceous shale, sandstone, and limestone, some Precambrian Sioux quartzite.	Mollisols (Hapludolls, Argiudolls)	Galva, Pringhar, Sac	Mesic/ Udic	26-46; 100-200	27-29	140-150	5-27; 62-87	Big bluestem-Indiangrass prairie, little bluestem-Indiangrass prairie, and limited areas of bur-oak woodland.	Cropland with corn, soybeans, alfalfa, and other feed grains.	
47b. Des Moines Loess	12214 Smooth to irregular plains. Dendritic streams and drained wetlands.	900-1500 / 50-100 Loamy till with no loess cover. Ground, stagnation and old moraines.	Mollisols (Hapludolls)	Clarion, Nicollet, Webster	Mesic/ Udic	26-46; 100-200	28-31	145-160	8-28; 62-87	Big bluestem-Indiangrass prairie, cordgrass wet prairie, and limited areas of bur-oak woodland.	Cropland with corn, soybeans, and other feed grains.	
47c. Iowan Surface	8515 Irregular to smooth plains. Low gradient streams.	900-1200 / 50-100 Thin loess over loamy till. Devonian and Silurian limestone and dolomite.	Mollisols (Hapludolls, Argiudolls)	Kenyon, Flood, Clyde	Mesic/ Udic	26-46; 100-200	31-33	145-155	6-24; 62-84	Big bluestem-Indiangrass prairie, areas of bur-oak-mixed oak savanna and woodlands.	Cropland with corn, soybeans, and other feed grains.	
47d. Missouri Alluvial Plain	2172 Smooth to irregular alluvial plain. Channelized streams.	600-1100 / 0-50 Alluvium over Pennsylvanian and Cretaceous shale, sandstone and limestone.	Mollisols (Hapludolls, Entisols (Ultifluvents, Fluvaquents))	Haynie, Letta, Waldron, Blake, Booker	Mesic/ Udic	26-46; 100-200	26-36	150-180	6-26; 62-91	Northern floodplain forest, pin oak forest, and cordgrass wet prairie.	Cropland with corn, soybeans, and other feed grains.	
47e. Steeply Raining Loess Prairies	5753 Open low hills. Intermittent and perennial streams, many channelized.	800-1300 / 100-300 Moderate to thick loess, 25 to 50 feet, over clay loam till. Pennsylvanian shale, sandstone and limestone.	Mollisols (Hapludolls, Argiudolls, Endoaqualfs)	Marshall, Exira, Shelby, Colo	Mesic/ Udic	26-46; 100-300	27-34	150-180	14-35; 66-90	Big bluestem-Indiangrass prairie, and white oak-red oak woodland, bur-oak mixed woodland.	Cropland with corn, soybeans, and other feed grains.	
47f. Rolling Loess Prairies	17858 Irregular plains to open low hills. Intermittent and perennial streams, many channelized.	700-1300 / 100-200 Moderate to thick loess, generally less than 25 feet, over clay loam till. Pennsylvanian and Cretaceous shale, sandstone and limestone.	Mollisols (Argiudolls, Endoaqualfs, Hapludolls) Alfisols (Hapludalfs)	Sharpsburg, Shelby, Colo, Marshall, Higginsville, Shelby, Exira, Knox	Mesic/ Udic	26-46; 100-300	30-37	160-180	17-38; 66-91	Mosaic of big bluestem-Indiangrass prairie, and bur-oak woodland.	Cropland with corn, soybeans, and other feed grains. Some pastureland, urban at Kansas City.	
47m. Western Loess Hills	1654 Open hills and bluffs. Intermittent and perennial streams.	1000-1500 / 100-300 Thick loess, 60 to 150 feet over clay-loam till. Pennsylvanian shale, sandstone and limestone in southern half of region. Cretaceous shale, sandstone and limestone in the northern half.	Mollisols (Hapludolls) Entisols (Udorthents)	Monona, Ida, Hamburg, Napier	Mesic/ Udic	26-46; 100-300	27-33	150-180	13-35; 67-91	Mosaic of bur-oak woodland and big bluestem-Indiangrass prairie.	Cropland with corn, soybeans, and other feed grains, and pastureland.	

52. DRIFTLESS AREA

Level IV Ecoregion	Physiography	Geology	Soil					Climate			Potential Natural Vegetation	Land Use and Land Cover
			Order (Great Groups)	Common Soil Series	Temperature/Moisture Regimes	Precipitation (Mean annual (inches))	Frost Free (Mean annual (days))	Mean Temperature (January minimum; July maximum; °F)				
52b. Paleozoic Plateau/Coalee Section	2806 Dissected hills, rolling to steep-sided valleys. Perennial streams.	700-1200 / 300-500 Thin loess and patches of glacial drift over Silurian, Ordovician and Cambrian dolomite, shale, sandstone, and limestone.	Alfisols (Hapludalfs)	Fayette, Dubuque	Mesic/ Udic	26-46; 100-300	32-34	140-155	8-24; 62-82	Mosaic little bluestem-Indiangrass prairie, bur-oak and white oak forests, and areas of maple-hickory forest.	Pastureland, cropland, and woodland. Principal crops are feed grains and forage for dairy cattle and other livestock.	

72. INTERIOR RIVER VALLEYS AND HILLS

Level IV Ecoregion	Physiography	Geology	Soil					Climate			Potential Natural Vegetation	Land Use and Land Cover
			Order (Great Groups)	Common Soil Series	Temperature/Moisture Regimes	Precipitation (Mean annual (inches))	Frost Free (Mean annual (days))	Mean Temperature (January minimum; July maximum; °F)				
72d. Upper Mississippi Alluvial Plain	1033 Smooth to irregular alluvial plains. Channelized streams.	425-550 / 0-50 Alluvium. Brown to gray silt, clay, sand, and gravel. Thickness of alluvial and older fluvial deposits more than 100 feet.	Mollisols (Endoaqualls)	Carlou, Portage, Chequest, Colo, Zoak	Mesic/ Udic	26-46; 100-300	34-38	150-180	20-30; 66-90	Cottonwood-willow riparian forest, pin oak forest, cordgrass wet prairie.	Cropland with corn, wheat, soybeans, and feed grains and hay for livestock.	
72e. Middle Mississippi Alluvial Plain	207 Smooth to irregular alluvial plains. Channelized streams.	300-425 / 0-50 Alluvium. Brown to gray silt, clay, sand, and gravel. Thickness of alluvial and older fluvial deposits more than 100 feet.	Entisols (Ultifluvents, Fluvaquents)	Haynie, Waldron, Blake	Mesic/ Udic	26-46; 100-300	38-44	180-200	26-44; 68-92	Cottonwood-willow riparian forest, green ash-cotton-hackberry forest, pin oak and swamp white oak forest.	Cropland with corn, wheat, soybeans, and feed grains and hay for livestock.	
72f. River Hills	6993 Bluffs, valleys and low hills. Areas of karst features. Perennial streams. Missouri River channelized.	400-810 / 50-300 Thin cherty clay and silty to sandy clay solution residuum. Areas of clay loam till along the northern boundary along the Missouri River and eastern boundary of the upper Mississippi River. Thin loess, 5 to 13 feet, on uplands along bluffs. Alluvium along the Missouri River. Ordovician, Mississippian, and Pennsylvanian limestones, sandstones, and shales with considerable bedrock exposures throughout the region.	Alfisols (Hapludalfs, Paleudalfs) Mollisols (Hapludolls, Inceptisols (Eutrudpts))	Lindley, Keswick, Goss, Barleye, Gasconade, Cadungup, Menfro, Haymond, Winfield, Hinton	Mesic/ Udic	26-46; 100-300	38-44	150-180	24-43; 66-91	White-black oak woodland, white oak woodland, and sugar maple-oak forest.	Cropland on uplands, pastureland, woodland, and areas of urban at St. Louis, St. Charles, and Columbia. Jefferson City. Feed grains and hay for livestock.	

73. MISSISSIPPI ALLUVIAL PLAIN

Level IV Ecoregion	Physiography	Geology	Soil					Climate			Potential Natural Vegetation	Land Use and Land Cover
			Order (Great Groups)	Common Soil Series	Temperature/Moisture Regimes	Precipitation (Mean annual (inches))	Frost Free (Mean annual (days))	Mean Temperature (January minimum; July maximum; °F)				
73a. Holocene Meander Bets	702 Wide, smooth alluvial plain. Point bars, meander belts, oxbow and abandoned channels. Extensive channelized streams and drained wetlands.	250-325 / 0-25 Unconsolidated silty, clayey, and sandy alluvium, 5 to 10 feet in depth over older fluvial deposits 70 feet to greater than 100 feet deep. Holocene deposits.	Entisols (Fluvaquents, Ultifluvents) Alfisols (Endoaqualfs)	Commerce, Caruthersville, Hayti, Dundee	Thermic/ Aquic, Udic	26-46; 100-300	45-46	180-210	28-48; 68-92	Oak-sweetgum forest, overcup oak-water hickory forest, and tupelo-cypress swamp forest.	Extensive cropland with cotton, rice and soybeans.	
73b. Pleistocene Valley Trains	2940 Wide, smooth to irregular alluvial plain. Intertufts, ravel channels, and terraces. Extensive channelized streams and drained wetlands.	250-325 / 0-25 Unconsolidated silty alluvium and alluvial sand, generally 5 to 15 feet in depth with narrow sandy areas as deep as 50 feet. Older fluvial deposits greater than 100 feet deep. Alluvium covers Pleistocene sand and gravel, glacial outwash.	Alfisols (Epiaqualfs, Hapludalfs) Entisols (Fluvaquents, Udoquents) Mollisols (Endoaqualls)	Shurley, Gilson, Silcaston, Lilbourn, Wardell, Dundee, Mardin, Dubbs, Clana	Thermic/ Aquic, Udic	26-46; 100-300	44-48	180-210	28-48; 68-92	Oak-sweetgum forest, overcup oak-water hickory forest, and tupelo-cypress swamp forest.	Extensive cropland with cotton, rice and soybeans.	

74. MISSISSIPPI VALLEY LOESS PLAINS

Level IV Ecoregion	Physiography	Geology	Soil					Climate			Potential Natural Vegetation	Land Use and Land Cover
			Order (Great Groups)	Common Soil Series	Temperature/Moisture Regimes	Precipitation (Mean annual (inches))	Frost Free (Mean annual (days))	Mean Temperature (January minimum; July maximum; °F)				
74a. Bluff Hills	357 Isolated low ridges. Intermittent streams.	300-500 / 100-175 Loess, cherty gravel and sand on ridges. Alluvial sand, silt, and clay on terraces. Bedrock exposures of Tertiary sands, gravels, and clays. Cretaceous sandstones, and Ordovician dolomites.	Alfisols (Hapludalfs, Frigidalfs, Albaqualfs) Entisols (Fluvaquents, Ultifluvents)	Memphis, Loring, Fal								