GEOLOGY

The basin lies in three physiographic regions: the Osage Plains region of the Central Lowland, and the Springfield Plateau and Salem Plateau subregions of the Ozark Plateau. Approximately 65% of the basin lies within the Osage Plains and includes the major drainage areas of the Marmaton and Marais des Cygnes rivers. The entire Weaubleau subbasin, plus small eastern sections of the Monegaw subbasin, and the Clear Creek subbasin occur within the Ozark Plateau (MDNR 1986a).
Figure 1.

Geology

The unglaciated basin is Pennsylvanian rock overlain with up to six feet of loess in the uplands. This Pennsylvanian strata of shale, coal and clay hinders the movement of water into the subsurface. Limited water movement results in very few springs. Therefore, stream flow is primarily sustained by surface precipitation and runoff. Baseflow is not well sustained during dry periods. Mississippian limestone is prevalent in eastern St. Clair and western Hickory counties. This area contains drainages within the Weaubleau subbasin (MDNR 1984).

Soils

Soils are primarily Cherokee Prairie. These are derived from Pennsylvania shales and sandstones with a silty, loess surface mantle. They are primarily dark to moderately dark in color, silty and of medium acidity in the northern part of the basin, grading into lighter colored, strongly acidic and highly leached soils in the southern areas. Relief is level to gently sloping with wide, flat stream valleys. Problems are erosion, wetness and droughtiness (United States Department of Agriculture [USDA] 1970).

Some Ozark Border soils occur in St. Clair, Hickory and Benton counties. These are derived from Mississippian and Ordovician limestone, dolomite and chert, and are typically erosive, droughty and stony in nature. The Ozark Border area is highly dissected with gently rolling divides and steep, stony slopes. Stream valleys are narrow, subject to flash flooding, and have soils of variable depth, texture and drainage (USDA 1970).

The basin contains 2,364 streams with a total combined length of 3,586 miles. The largest is the Osage River, an eighth order stream, 98.5 miles long. Essentially the entire length of the Osage River above Truman Dam is affected by Truman Lake. River banks are exposed above the confluence of the Sac and Osage rivers (57.5 miles above Truman Dam), however, all riffle areas are inundated. The two largest tributaries are the Marais des Cygnes and Marmaton rivers.

Information on stream orders, lengths, watersheds, and locations is presented in Tables 1 and 2. Data on orders, lengths, and locations were obtained or calculated from United States Geological Survey (USGS) 7.5-minute topographic maps. Watershed area information is from Funk (1968)

and USDA (1981).

Gradient information for major streams (fourth order and larger streams, longer than 10 miles) was obtained or calculated from USGS 7.5-minute topographic maps, using a digitizer and the computer program MAPWORK. Data provide only general approximations of stream gradients. Topographic maps date from 1927 to 1982, and elevation changes on maps occur in five, 10 or 20 feet intervals. Graphs of entire streams, upper and lower reaches of larger streams, and some subbasins are presented in Appendix A. Average gradients and locations of Department of Conservation areas are included above the streams on each graph.

Average gradients for entire streams range from 0.81 ft/mi (the original channel of the Marais des Cygnes River) to 25.3 ft/mi (Little Clear Creek). Streams entering from the western section of the basin have lower average gradients than streams entering from the eastern portion. This difference reflects the transition from Osage Plains to Ozark Plateau streams.

The Weaubleau, Hogles, and Bear Creeks subbasin is in eastern St.Clair, southwestern Benton, and western Hickory and north-central Polk counties within the Springfield and Salem plateaus. Weaubleau Creek (4th order) originates in north-central Polk County, flows northwest to the Osage River (49.3 miles above Truman Dam) and drains 139 mi^2 (USDA 1981). Its largest tributary is Little Weaubleau Creek (4th order). Hogles Creek (4th order) begins in west-central Hickory county, flows north to the Osage River (10.2 miles above Truman Dam) and has a drainage area of 61 mi^2 (USDA 1981). Bear Creek (4th order) starts in west-central Hickory county, flows northwest to the Osage River (45 miles above Truman Dam) and has a watershed of 26 mi^2 (USDA 1981).

Average gradients are 11.1 ft/mi for Weaubleau Creek and 13.4 ft/mi for Hogles Creek. Three major tributaries to Weaubleau Creek have substantially larger average gradients; 41.5 ft/mi for Clear Creek, 22.2 ft/mi for the South Fork of Weaubleau Creek and 22.6 ft/mi for Little Weaubleau Creek (Appendix A).

The Monegaw and Gallinipper Creeks subbasin is in St. Clair, southeastern Bates, northeastern Vernon and extreme southwestern Henry counties primarily within the Osage Plains. A small section in eastern St. Clair County, including most of Gallinipper Creek, is within the Springfield Plateau. The largest streams are Monegaw Creek, Little Monegaw Creek, Panther Creek and Gallinipper Creek.

Monegaw Creek (5th order) arises in extreme southwestern Henry County, flows southeast to the Osage River (68.8 miles above Truman Dam) and drains 82 mi^2 (USDA 1981). Little Monegaw Creek (5th order) originates in north central St. Clair County, flows south to the Osage River (67.5 miles above Truman Dam) and has a watershed of 34 mi^2 (Funk 1968). Panther Creek (4th order) begins in southeastern Bates County, flows south to the Osage River (88.7 miles above Truman Dam) and drains 59 mi^2 (USDA 1981). Gallinipper Creek (4th order) originates in central St.Clair County, flows southeast to the Osage River (53.4 miles above Truman dam), and has a watershed of 34 mi^2, primarily within the Springfield Plateau (USDA 1981). Average

gradients are 9.2 for Monegaw Creek, 10.5 for Little Monegaw Creek and 12.3 for Panther Creek (Appendix A).

The Clear Creek subbasin is in eastern Vernon, northeastern Barton, northwestern Cedar and southwestern St. Clair counties which are primarily within the Osage Plains. The lower reach of Clear Creek and all of Little Clear Creek are within the Springfield Plateau. Major streams are Clear Creek and its two largest tributaries, the West Fork of Clear Creek and Little Clear Creek.

Clear Creek (6th order) starts in northeastern Barton County, flows northeast to the Osage river (75.3 miles above Truman dam) and has a watershed of 330 mi^2 (USDA 1981). The West Fork of Clear Creek (5th order) arises in east central Vernon County, flows northeast to Clear Creek (RM 24.2) and drains 75 mi^2 (Funk 1968). Little Clear Creek (4th order) originates in northwestern Cedar County, flows north to Clear Creek (RM 2.9) and has a drainage area of 28 mi^2 (Funk 1968).

Average gradients are 4.7 ft/mi for Clear Creek and 8.1 ft/mi for the West Fork of Clear Creek. Little Clear Creek, located within the Springfield Plateau, has a substantially higher gradient of 25.3 ft/mi. Individual stream gradients and combined graphs are presented in Appendix A.

The Marais des Cygnes River subbasin is located in Bates County within the Osage Plains. The upper reaches of the Marais des Cygnes River, Walnut Creek and Mine Creek occur in Kansas. The watershed encompasses 3,230 mi^2 in Kansas (at the Kansas-Missouri state line) and 474 mi^2 in Missouri (USDA 1981, Corps of Engineers [COE] 1985).

The Marais des Cygnes River (7th order) originates in Wabaunsee County in east central Kansas, and flows southeast 184.0 miles through Kansas and 33.8 miles in Missouri (the current channel). The original Marais des Cygnes River channel in Missouri was 52.2 miles in length. All but six miles were channelized in the early 1900s, creating the Bates County Drainage Ditch (Atkenson 1918). This channelization changed stream length and order, resulting in a loss of 9.5 miles of 7th order stream and 8.9 miles of 6th order stream. The current river channel includes the first 14 miles of the Marais des Cygnes River where it then flows into the Bates County Drainage Ditch. Three confluences occur; the original Marais des Cygnes River channel joins the Marmaton River (RM 4.6), and the Bates County Drainage Ditch merges with the Marmaton River and the Osage River (93.8 miles above Truman Dam). The Osage River originates at the confluence of the Bates County Drainage Ditch (RM 2.0) and the Marmaton River.

Major tributaries to the Marais des Cygnes River are Miami Creek (including the Miami Drainage Ditch) and Walnut Creek. Miami Creek (6th order) begins in extreme northwestern Bates County. The original channel flows southeast for 39.2 miles to its confluence with the Marais des Cygnes River (RM 22.7). Channelization of the lower 4.5 miles of Miami Creek during the early 1900s created the Miami Drainage Ditch (6th order). This channelization moved the mouth of Miami Creek nine miles down the original channel of the Marais des Cygnes River and increased the 6th order stream reach 1.4 miles. The watersheds are 149 mi^2 for Miami Creek and 60 mi^2 for the Miami Drainage Ditch (USDA 1981). Walnut Creek (5th order) arises in southeastern Linn County, Kansas, flows northeast and has a drainage area of 48 mi^2 (Funk 1968).

Two additional major streams are tributaries to Miami Creek. Double Branch (5th order) commences in south central Bates County, flows southwest and drains 31 mi^2 (Funk 1968). Mound Branch (5th order) starts in central Bates County, flows southwest and has a watershed of 49 mi^2 (USDA 1981).

Average gradients range from 0.8 ft/mi to 24.4 ft/mi. Double Branch has a much higher gradient (24.4 ft/mi) than the other streams. Individual stream gradients and two combined plots (Marais des Cygnes River subbasin, and Bates County Drainage Ditch and Marmaton River) are presented in Appendix A.

Marmaton River and Little Osage River subbasin is in Vernon and southern Bates counties within the Osage Plains. The upper reaches of the Marmaton River, Little Osage River and Shiloh Creek occur in Kansas. The basin's watershed encompasses 688 mi^2 in Kansas and 333 mi^2 in Missouri (USDA 1981, COE 1985).

The Marmaton River (7th order) originates in Allen County in southeastern Kansas. It flows northeast 63.7 miles through Kansas and 51.7 miles in Missouri where it then joins the Bates County Drainage Ditch and forms the Osage River. The drainage area is 393 mi^2 at Fort Scott, Kansas, and 143 mi^2 in Missouri (USDA 1981, COE 1985).

The largest tributary to the Marmaton River within this subbasin is the Little Osage River. This river begins in Allen County in southeastern Kansas. It flows east 46.0 miles through Kansas and 29.9 miles in Missouri before joining the Marmaton River (RM 17.6). The watershed encompasses 295 mi^2 at Fulton, Kansas, and 190 mi^2 in Missouri (USDA 1981, COE 1985).

Average gradients are 0.9 ft/mi for the Marmaton River and 1.3 ft/mi for the Little Osage River. Individual stream gradients plus a combined plot are presented in Appendix A.

The Dry Wood and Little Dry Wood creeks subbasin is in Vernon and northern Barton counties within the Osage Plains. Major streams include Dry Wood Creek, the West Fork of Dry Wood Creek and Little Dry Wood Creek. The upper reaches of the West Fork of Dry Wood Creek, Moores Branch, Bucks Run, and Second Nicolson Creek occur in Kansas.

Dry Wood Creek (6th order) starts in northwestern Barton County, flows north to the Marmaton River (RM 40.9), and drains 128 mi^2 in Kansas and 218 mi^2 in Missouri (USDA 1981, COE 1984). The West Fork of Dry Wood Creek (5th order), its largest tributary, arises in northeastern Crawford County, Kansas, and flows northeast for 15 miles through Kansas and 7 miles in Missouri. Little Dry Wood Creek (5th order) originates in north central Barton County, flows north to the Marmaton River (RM 33.6) and drains 179 mi^2 (USDA 1981).

Average gradients are 2.7 ft/mi for Dry Wood Creek, 1.7 for the West Fork of Dry Wood Creek and 5.6 for Little Dry Wood Creek. Individual stream gradients plus a combined plot are presented in Appendix A.

Table 1. Stream name, order, length, watershed area and location (name of the stream it confluences with and river mile) for third-order and larger streams in the West Osage River Basin in west-central Missouri.

NAME	ORDER	LENGTH (mi)	AREA (mi^2)	CONFLUENCE	RIVER MILE
Osage River	**8**	**98.5**	**2,795**	**Missouri River**	**130.2**
WEAUBLEAU, HOGLES AND BEAR CREEKS SUBBASIN					
Hogles Creek	**4**	**13.8**	**61**	**Osage River**	**10.2**
	3	**8.6**			
Trib to Hogles Creek	3	0.1		Hogles Creek	4.6
Trib to Hogles Creek	3	0.9		Hogles Creek	4.9
Little Hogles Creek	3	3.8		Hogles Creek	5.3
Trib to Hogles Creek	3	1.7		Hogles Creek	13.8
Unnamed	3	0.9		Osage River	30.2
Wright Creek	3	3.4		Osage River	31.4
Big Muddy Creek	4	4.1		Osage River	37.0
	3	2.5			
Little Muddy Creek	3	1.8		Big Muddy Creek	1.6
Trib to Big Muddy Creek	3	0.8		Big Muddy Creek	4.1
Briley Creek	4	0.8		Osage River	44.8
	3	2.4			
Collins Hollow	3	0.3		Briley Creek	0.8
Bear Creek	**4**	**5.9**	**26**	**Osage River**	**45.1**
	3	**0.9**			
Trib to Bear Creek	3	0.1		Bear Creek	5.9
Weaubleau Creek	**4**	**19.8**	**139**	**Osage River**	**49.3**
	3	**12.3**			
Clear Creek	3	2.0		Weaubleau Creek	9.8
S Fork Weaubleau Creek	3	7.9		Weaubleau Creek	13.7
Trib to Weaubleau Creek	3	1.0		Weaubleau Creek	17.3
Trib to Weaubleau Creek	3	1.1		Weaubleau Creek	19.5
Little Weaubleau Creek	**4**	**2.0**	**80**	**Weaubleau Creek**	**19.8**
	Subtotal	**98.9 mi**	**306**		
	4th Order	46.4 mi			
	3rd Order	52.5 mi			
MONEGAW AND GALLINIPPER CREEKS SUBBASIN					
Slough Branch	3	3.1		Osage River	50.4
Brush Creek	4	3.5		Osage River	51.5
	3	3.6			
Trib to Brush Creek	3	1.0		Brush Creek	3.5
Gallinipper Creek	**4**	**7.0**	**34**	**Osage River**	**53.4**
	3	**1.8**			
Trib to Gallinipper Creek	3	0.3		Gallinipper Creek	2.6

Table 1. Continued.

NAME	ORDER	LENGTH (mi)	AREA (mi^2)	CONFLUENCE	RIVER MILE
Trib to Gallinipper Creek	3	2.3		Gallinipper Creek	3.6
Panther Creek	3	1.9		Gallinipper Creek	4.6
Trib to Gallinipper Creek	3	0.4		Gallinipper Creek	6.5
Trib to Gallinipper Creek	3	1.3		Gallinipper Creek	6.6
Trib to Gallinipper Creek	3	1.4		Gallinipper Creek	6.6
Trib to Gallinipper Creek	4	0.2		Gallinipper Creek	7.0
Trib to Trib to Gallinipper Ck	3	0.7		Trib to Gallinipper Creek	0.2
Trib to Trib to Gallinipper Ck	3	1.6		Trib to Gallinipper Creek	0.2
Turkey Creek	3	2.3		Osage River	56.2
Salt Creek	4	3.3		Osage River	60.5
	3	0.7			
Trib to Salt Creek	3	0.5		Salt Creek	3.3
Coon Creek	4	2.3		Osage River	64.4
	3	1.7			
Trib to Coon Creek	3	0.7		Coon Creek	0.2
Trib to Coon Creek	3	0.7		Coon Creek	2.3
Unnamed	3	1.0		Osage River	74.3
Little Monegaw Creek	**5**	**5.1**	**34**	**Osage River**	**67.5**
	4	**2.9**			
	3	**1.6**			
Finley Creek	4	1.2		Little Monegaw Creek	5.1
	3	0.4			
Trib to Finley Creek	3	0.4		Finley Creek	1.2
Spill Creek	3	1.6		Little Monegaw Creek	8.0
Monegaw Creek	**5**	**10.3**	**82**	**Osage River**	**68.8**
	4	**2.9**			
	3	**4.2**			
Trib to Monegaw Creek	3	1.0		Monegaw Creek	1.9
Clammer Branch	3	2.0		Monegaw Creek	7.9
Reid Creek	3	4.0		Monegaw Creek	8.9
Ricky Creek	4	3.4		Monegaw Creek	10.3
	3	2.3			
Trib to Ricky Creek	3	1.6		Ricky Creek	0.4
Trib to Ricky Creek	3	1.2		Ricky Creek	3.4
Camp Branch	3	2.8		Monegaw Creek	10.5
Ditty Creek	3	0.6		Monegaw Creek	13.2
Baker Branch	4	1.2		Osage River	76.4
	3	4.5			
Trib to Baker Branch	3	1.8		Baker Branch	1.2
Fowler Branch	3	1.8		Osage River	81.6
Wells Branch	3	4.5		Osage River	83.1
Campbell Branch	3	5.2		Osage River	85.7
Miller Branch	3	7.6		Osage River	87.0
Panther Creek	**4**	**13.0**	**59**	**Osage River**	**88.7**
	3	**1.3**			

Table 1. Continued.

NAME	ORDER	LENGTH (mi)	AREA (mi^2)	CONFLUENCE	RIVER MILE
Camp Branch	3	5.5		Panther Creek	3.0
Unnamed Branch	3	3.0		Panther Creek	13.0
McKenzie Creek	3	5.7		Osage River	92.4
Shaw Branch	3	4.2		Osage River	93.5
Ladies Branch	4	5.3		Osage River	96.4
	3	3.5			
Coal Creek	3	3.2		Ladies Branch	5.3
	Subtotal	164.1 mi	209		
	5th Order	15.4 mi			
	4th Order	46.2 mi			
	3rd Order	102.5 mi			
CLEAR CREEK SUBBASIN					
Clear Creek	6	24.2	330	Osage River	75.3
	5	18.4			
	4	4.3			
	3	10.0			
Little Clear Creek	4	6.6	28	Clear Creek	2.9
	3	2.3			
Trib to Little Clear Creek	3	0.9		Little Clear Creek	3.8
Trib to Little Clear Creek	3	1.3		Little Clear Creek	6.6
Kitten Creek	4	2.9		Clear Creek	13.6
	3	5.7			
Trib to Kitten Creek	3	1.9		Kitten Creek	2.9
Walnut Creek	4	1.5		Clear Creek	16.6
	3	0.9			
Trib to Walnut Creek	3	1.1		Walnut Creek	1.5
McCord Branch	3	3.1		Clear Creek	18.1
Fly Creek	4	1.8		Clear Creek	20.3
	3	4.7			
Trib to Fly Creek	3	1.1		Fly Creek	1.8
Melten Creek	3	2.8		Clear Creek	21.9
West Fork Clear Creek	5	5.4	75	Clear Creek	24.2
	4	3.9			
	3	4.5			
Robinson Branch	4	4.2		West Fork Clear Creek	2.0
	3	2.3			
Trib to Robinson Branch	3	4.3		Robinson Branch	4.2
Wilson Branch	4	1.5		West Fork Clear Creek	5.4
	3	1.4			
Trib to Wilson Branch	3	1.0		Wilson Branch	1.5
Unnamed	3	1.7		West Fork Clear Creek	7.6
Camp Branch	3	4.5		West Fork Clear Creek	9.3
Mulberry Creek	3	2.2		Clear Creek	30.7

Table 1. Continued.

NAME	ORDER	LENGTH (mi)	AREA (mi^2)	CONFLUENCE	RIVER MILE
Unnamed Trib	3	0.4		Clear Creek	35.1
McCarty Creek	4	4.3	25	Clear Creek	36.1
	3	5.5			
Unnamed	3	0.7		Clear Creek	37.4
Walnut Creek	4	2.7		Clear Creek	42.6
	3	1.7			
Trib to Walnut Creek	3	0.5		Walnut Creek	2.6
Unnamed Trib	3	1.4		Clear Creek	45.0
Little Clear Creek	3	5.7		Clear Creek	46.9
Subtotal		155.3 mi	458		
6th Order		24.2 mi			
5th Order		23.8 mi			
4th Order		33.7 mi			
3rd Order		73.6 mi			
MARAIS DES CYGNES RIVER SUBBASIN					
Marais des Cygnes River (current channel)[1]	7	4.3 (chan.)	136	Marmaton River	0.0
				Osage River	93.8
	6	15.4 (chan.)			
	6	14.1[2] (unchan.)		Marais des Cygnes River	
(original channel)[1]	7	13.8		Marmaton River	4.6
	6	38.4			
Bates County Drainage Ditch[1]	7	4.3[2]		Marmaton River	0.0
	6	15.4[2]		Osage River	93.8
New Home Creek	4	6.1		Bates Co. Drainage Ditch	15.6
	3	0.9			
Trib to New Home Creek	3	1.6		New Home Creek	0.6
Trib to New Home Creek	3	2.4		New Home Creek	4.4
Trib to New Home Creek	3	1.9		New Home Creek	6.1
Sycamore Branch	3	0.8		Marais des Cygnes River	7.8
Miami Drainage Ditch	6	5.7	60	Marais des Cygnes River	13.8
Lone Oak Branch	4	0.6		Double Branch	1.1
	3	5.0			
Double Branch	5	1.1	31	Miami Drainage Ditch	
	1.5				
	4	3.0			
	3	2.7			
Miami Creek (orig)	6	6.3	149	Marais des Cygnes River	22.7
	5	13.0			
	4	12.1			
	3	1.5			

Table 1. Continued.

NAME	ORDER	LENGTH (mi)	AREA (mi^2)	CONFLUENCE	RIVER MILE
Soap Creek	3	0.8		Miami Creek	1.8
Possum Branch	3	4.9		Miami Creek	5.1
Mound Branch	5	8.5	49	Miami Creek	6.3
	4	1.7			
	3	3.9			
Root Branch	4	4.2		Mound Branch	7.1
	3	0.6			
Trib to Root Branch	3	0.2		Root Branch	1.6
Trib to Root Branch	3	0.2		Root Branch	4.2
East Mound Branch	4	0.9		Mound Branch	8.5
	3	2.8			
Willow Branch	3	1.9		East Mound Branch	0.9
Bones Branch	4	4.4	34	Miami Creek	14.4
	3	4.2			
Trib to Bones Branch	3	0.5		Bones Branch	0.0
Trib to Bones Branch	3	1.3		Bones Branch	2.8
Trib to Bones Branch	3	0.5		Bones Branch	4.4
Unnamed	3	2.8		Miami Creek	9.6
Unnamed	3	1.8		Miami Creek	11.0
Knob Creek	4	4.8	27	Miami Creek	19.3
	3	2.2			
Trib to Knob Creek	3	2.4		Knob Creek	4.8
Willow Branch	3	1.5		Miami Creek	28.0
Unnamed	3	1.2		Miami Creek	31.4
Unnamed	3	2.0		Miami Creek	32.9
Unnamed	3	2.9		Marais des Cygnes River	29.8
Parker Branch	3	2.0		Marais des Cygnes River	30.5
Walnut Creek	5	2.7	48	Marais des Cygnes River	40.2
	4	6.1			
	3	1.3			
Gillum Creek	4	1.9		Walnut Creek	2.7
	3	2.7			
Trib to Gillum Creek	3	0.1		Gillum Creek	1.9
Trib to Walnut Creek	3	0.5		Walnut Creek	5.2
Trib to Walnut Creek	3	0.4		Walnut Creek	8.8
Mulberry Creek	4	5.2	39	Marais des Cygnes River	45.0
	3	5.2			
Trib to Mulberry Creek	3	1.8		Mulberry Creek	5.2
Mine Creek	4	2.5		Marais des Cygnes River	49.7
	Subtotal	232.1 mi	573		
	7th order	18.1 mi			
	6th order	65.8 mi			
	5th order	25.3 mi			
	4th order	53.5 mi			
	3rd order	69.4 mi			

Table 1. Continued.

NAME	ORDER	LENGTH (mi)	AREA (mi^2)	CONFLUENCE	RIVER MILE
MARMATON AND LITTLE OSAGE RIVERS SUBBASIN					
Marmaton River	7	40.9	143	Bates Co. Drainage Ditch	2.0
	6	10.8			
Bee Branch	4	4.3		Marmaton River	6.4
	3	2.4			
East Fork Bee Branch	4	1.0		Bee Branch	4.3
	3	1.5			
Unnamed	3	0.8		E Fork Bee Branch	1.0
Muddy Creek	3	12.4		Marmaton River	6.9
Hightower Creek	3	9.9	27	Marmaton River	12.1
Eggelson Slough	3	2.2		Marmaton River	16.9
Little Osage River	5	29.9	190	Marmaton River	17.6
Willow Branch	3	4.5		Little Osage River	2.7
Reed Creek	3	9.7		Little Osage River	7.8
Christian Creek	3	3.1		Little Osage River	9.0
Townsend Slough	4	3.7		Little Osage River	9.6
	3	0.3			
Unnamed	3	0.2		Townsend Slough	3.7
Unnamed	3	0.9		Little Osage River	11.7
Pryor Creek	4	6.6	32	Little Osage River	14.1
	3	2.6			
Cottonwood Creek	3	0.3		Pryor Creek	2.7
West Fork Pryor Creek	4	1.8		Pryor Creek	6.6
	3	1.4			
Unnamed	3	0.7		West Fork Pryor Creek	1.8
Unnamed	3	0.8		Little Osage River	18.2
Unnamed	3	1.6		Little Osage River	21.9
Unnamed	3	3.0		Little Osage River	22.0
Bitter Root Creek	3	5.4		Little Osage River	23.2
Duncan Creek	3	7.7		Little Osage River	26.8
Old Town Branch	4	7.4		Marmaton River	22.7
	3	2.7			
Unnamed	3	0.3		Old Town Branch	11.1
Unnamed	3	6.0		Old Town Branch	3.4
Unnamed	3	0.8		Old Town Branch	6.4
Cottonwood Branch	3	1.4		Old Town Branch	7.4
Douglas Branch	4	6.8		Marmaton River	25.0
	3	1.0			
Unnamed	3	0.5		Douglas Branch	3.0
Unnamed	3	0.5		Douglas Branch	6.8
Unnamed	3	1.6		Marmaton River	27.6
Unnamed	3	0.7		Marmaton River	29.4
Sulfur Springs Branch	3	3.1		Marmaton River	30.3

Table 1. Continued.

NAME	ORDER	LENGTH (mi)	AREA (mi^2)	CONFLUENCE	RIVER MILE
Green River	3	0.7		Marmaton River	34.6
Unnamed	3	2.0		Marmaton River	38.5
Twomile Creek	4	4.9		Marmaton River	39.5
	3	1.1			
Unnamed	3	0.5		Twomile Creek	0.0
Unnamed	3	0.7		Twomile Creek	4.9
Cottonwood Creek	4	0.6		Marmaton River	46.9
	3	5.2			
Unnamed	3	0.6		Cottonwood Creek	0.6
Shiloh Creek	3	4.6		Marmaton River	49.4
	Subtotal	219.5 mi	392		
	7th order	36.3 mi			
	6th order	10.8 mi			
	5th order	29.9 mi			
	4th order	37.1 mi			
	3rd order	105.4 mi			
DRY WOOD AND LITTLE DRY WOOD CREEKS SUBBASIN					
Little Dry Wood Creek	5	19.6	179	Marmaton River	33.6
	4	14.8			
	3	5.1			
Birch Branch	3	3.9		Little Dry Wood Creek	4.7
Ingram Creek	3	1.7		Little Dry Wood Creek	8.5
Landon Branch	4	5.5		Little Dry Wood Creek	8.8
	3	2.5			
Unnamed	3	0.5		Landon Branch	5.5
Unnamed	3	1.8		Landon Branch	5.5
Unnamed	3	3.2		Little Dry Wood Creek	14.6
Unnamed	3	5.3		Little Dry Wood Creek	17.3
Prairie Flower Branch	3	2.5		Little Dry Wood Creek	18.2
Pleasant Run Creek	4	8.0		Little Dry Wood Creek	19.6
	3	1.8			
Unnamed	3	2.3		Pleasant Run Creek	2.3
Unnamed	3	1.0		Pleasant Run Creek	3.1
Unnamed	3	1.6		Little Dry Wood Creek	22.5
Unnamed	3	1.8		Little Dry Wood Creek	26.4
Little Creek	3	4.7		Little Dry Wood Creek	30.1
Bucks Run Creek	3	2.2		Little Dry Wood Creek	34.4
Unnamed	3	1.1		Bucks Run Creek	2.2
Dry Wood Creek	6	16.9	218	Marmaton River	40.9
	5	9.2			
	4	6.8			
Hackberry Branch	3	6.0		Dry Wood Creek	3.2
Green Branch	3	2.4		Dry Wood Creek	5.5

Table 1. Continued.

NAME	ORDER	LENGTH (mi)	AREA (mi^2)	CONFLUENCE	RIVER MILE
Cheney Branch	3	2.5		Dry Wood Creek	9.2
Moores Branch	3	7.4	34	Dry Wood Creek	9.8
Unnamed	3	3.8		Dry Wood Creek	12.8
West Fork Dry Wood Creek	5	7.2		Dry Wood Creek	16.9
McKill Creek	4	2.6		Dry Wood Creek	20.7
	3	3.0			
Comstock Creek	3	8.5		McKill Creek	2.8
Unnamed	3	1.6		McKill Creek	5.6
East Fork Dry Wood Creek	4	9.9		Dry Wood Creek	26.1
	3	0.7			
Unnamed	3	7.6		East Fork Dry Wood Creek	9.9
West Elm Branch	3	0.8		Dry Wood Creek	29.4
First Nicolson Creek	3	1.7		Dry Wood Creek	32.9
Second Nicolson Creek	4	1.8		Dry Wood Creek	32.9
	3	2.5			
Fleck Creek	3	1.5		Second Nicolson Creek	1.8
	Subtotal	195.3 mi	431		
	6th order	16.9 mi			
	5th order	36.0 mi			
	4th order	49.4 mi			
	3rd order	93.0 mi			

[1] The original Marais des Cygnes River channel includes the entire river prior to channelization, which occurred between 1906 and 1911, and created the Bates County Drainage Ditch. The current river channel includes the first 14 miles of the Marais des Cygnes River in Missouri where it then joins the Bates County Drainage Ditch. Three confluences occur; the original Marais des Cygnes River channel joins the Marmaton River (RM 4.6), and the Bates County Drainage Ditch merges with the Marmaton River and the Osage River (93.8 miles above Truman Dam). The Osage River originates at the confluence of the Bates County Drainage Ditch (at RM 2.0) and the Marmaton River.

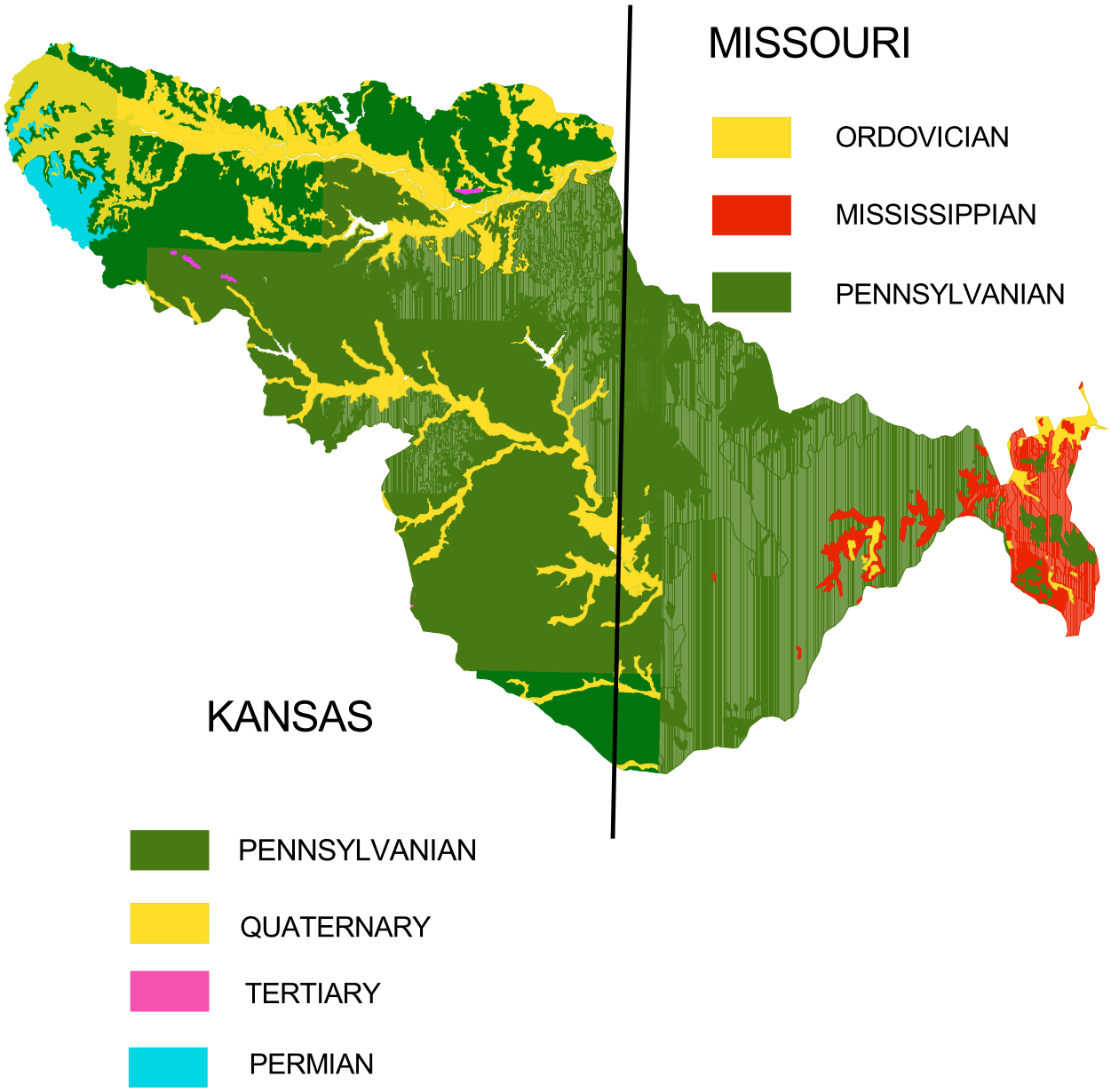
[2] Removed from subtotals.

Table 2. Mileage and orders for streams in the West Osage River Basin in west-central Missouri.

STREAM ORDER	NUMBER OF STREAMS	TOTAL MILES
First	1,505	1,791.9
Second	583	625.7
Third	196	496.4
Fourth	54	266.3
Fifth	12	130.4
Sixth	9	117.7
Seventh	4	59.0
Eighth*	1	98.5
Total	2,364	3,585.9

*The Osage River in the Basin is now inundated by Truman Lake.

Geology of West Osage River watershed.



Location of the West Osage river watershed within the Osage Plains and Springfield Plateau sections of Missouri's Ozark Natural Division.