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Headwater Streams of the Flint Hills

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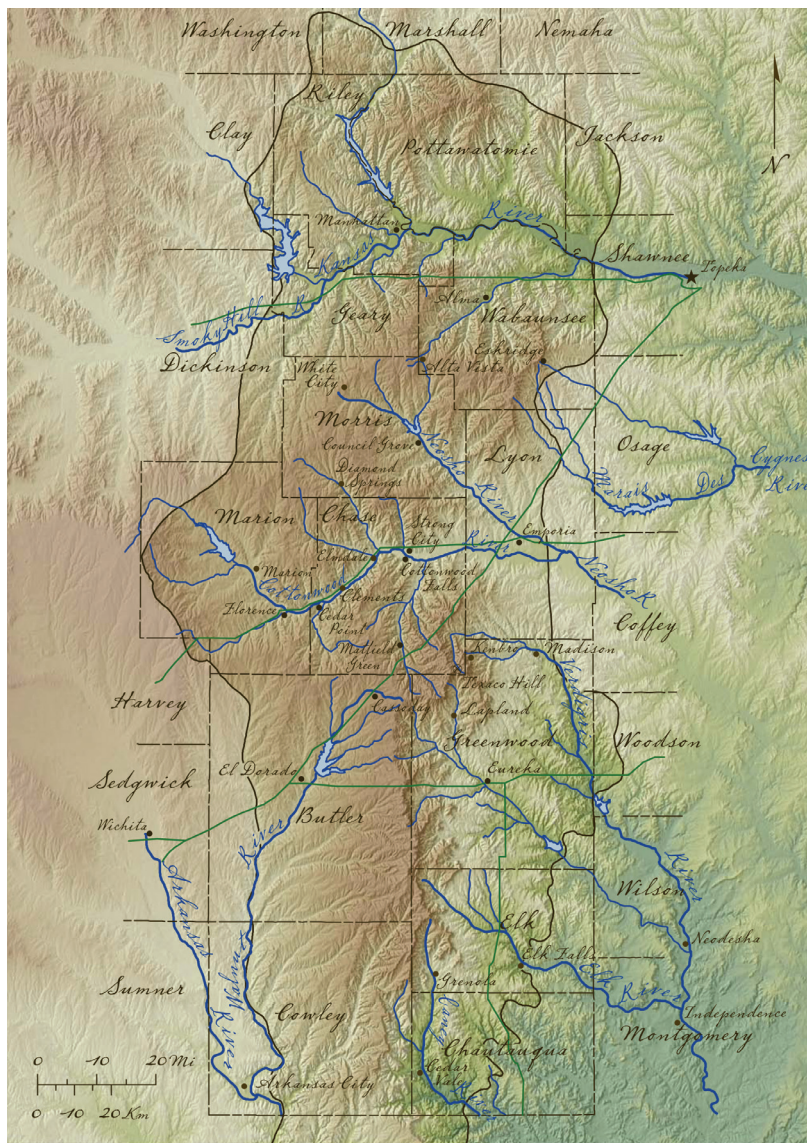
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STREAMS AND RIVERS IN THE FLINT HILLS

Headwater Streams of the Flint Hills

There has been a great many changes since I came here in the year 1862. All of the streams were so clear that fish could be seen several feet under water and there were worlds of fish in all the streams. The beds of the streams were rock, gravel or clay. The entire country being covered with a heavy growth of bluestem grass, there was very little dirt washed into the streams, but since the country has been settled and much of the land plowed, the pools in the small streams have been filled and the river is filling very fast so there is little room left for the fish.

“Pioneer Days,” By E.T. Wickersham, *Fall River Star*, February 23, 1934

Among the most beautiful environments of the Flint Hills are the springs and headwater streams that are part of and help to carve the landscape. Meandering through the vast sea of grass, hundreds of free-flowing ribbons of water might go unnoticed as we speed along the highway.



However, these spring-fed creeks are unique prairie environments that provide serene and secure refuges for extraordinary flora and fauna. Streams in the northern Flint Hills are tributaries of the Kansas and Missouri rivers and those in the southern Flint

Hills are part of the Arkansas River basin. Both drainages are fed by numerous tributaries arising in the Flint Hills including the headwaters of the Neosho, Cottonwood, Walnut, Fall, Verdigris, Elk, Caney, and Marais des Cygnes rivers. Whether ephemeral,

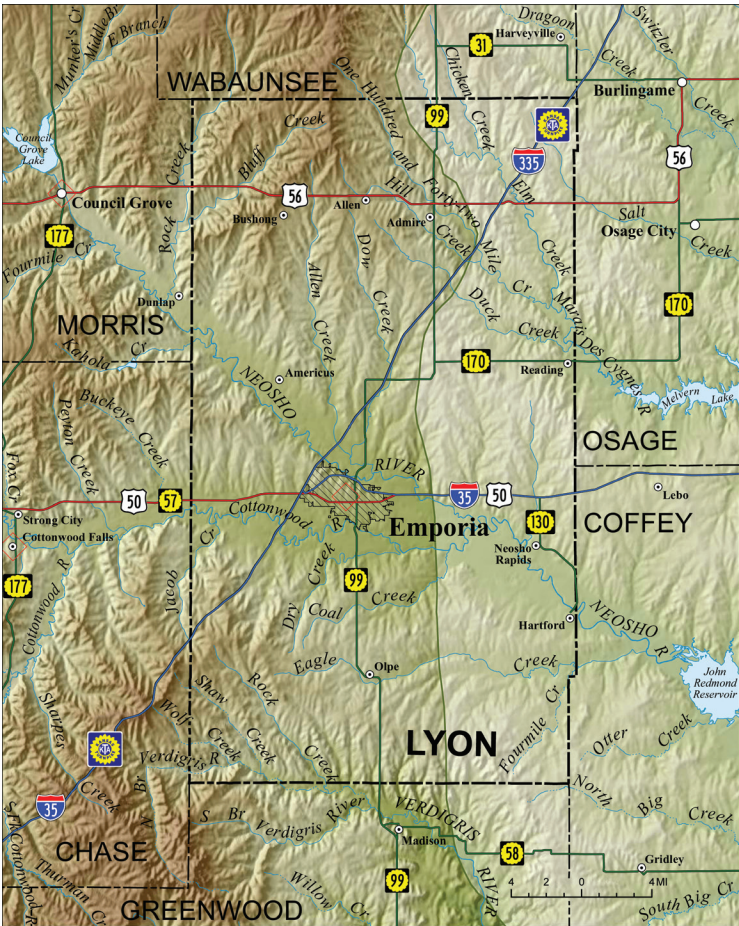
intermittent, or perennial, many of these headwaters are among the region’s most pristine waters, and they provide us with an indication of what area streams were like historically.

Numerous tributaries enter Elm Creek in northern Lyon County, including Chicken, Onion, and Log Cabin creeks, before joining 142 Mile Creek to form the Marais des Cygnes River.

In the Kansas River drainage of the northern Flint Hills, several small streams in Marshall County feed the Big Blue and Black Vermillion rivers, which are impounded by Tuttle Creek Lake and Dam north of Manhattan in Riley and Pottawatomie counties. Wildcat Creek runs through Manhattan, and Kings Creek on Konza Prairie empties into McDowell Creek, which is a direct

tributary of the Kansas River. Just southeast of Manhattan lies the scenic Pillsbury Crossing Wildlife Area and Deep Creek, a Kansas River headwater tributary arising near the junction of Riley, Geary, and Wabaunsee counties that supports a population of the endangered Topeka shiner. Farther south, near Alma and Alta Vista in Wabaunsee County, numerous small streams feed Mill Creek, another picturesque tributary of the Kansas River.

South of Eskridge in southern Wabaunsee County arise the headwaters of the Marais des Cygnes River, with Dagoon Creek and Elm Creek. Numerous tributaries enter Elm Creek in northern Lyon County, including Chicken, Onion, and Log Cabin creeks, before joining 142 Mile Creek to form the Marais des Cygnes River, which is impounded in Melvern Lake. This river flows east and becomes the Osage River in Missouri, after collecting the Little Osage, and is impounded by the Harry S. Truman Reservoir, eventually uniting with the Missouri River.



HEADWATER STREAMS IN LYON COUNTY

Maps courtesy John Dunham, Kansas Geological Survey, University of Kansas

A development campaign to build Cedar Point Reservoir in the 1960s would have dammed Cedar Creek and destroyed what many biologists consider a benchmark or reference stream. The Flint Hills would have lost a relatively undisturbed and unpolluted stream rich with aquatic life and a useful reference for comparison to similar streams now evidencing impact by humans.

In central and southern Lyon County, streams and rivers flow southward into the Arkansas River basin. The headwaters of the Neosho River arise south of White City in Morris County, including Gilmore, Crooked, Haun, Level, Parkers, Ramseys, Lairds, and Slough creeks.

Council Grove Reservoir impounds these water sources, along with eastern tributaries Short, Munkers, Elkhorn, and Richey creeks. Further east, in northwest Lyon County, this year's Symphony in the Flint Hills concert site is located at the top of Wright's Creek. Just to the north and west are Bluff and Rock creeks

In Chase County, numerous Flint Hills streams drain into the Cottonwood River, a tributary of the Neosho. Near the Tallgrass Prairie National Preserve north of Strong City, Palmer Creek joins Fox Creek before emptying into the Cottonwood River. East of Cottonwood Falls, the South Fork of the Cottonwood joins as a major tributary with headwaters south of Matfield Green. Many tributaries feed the South Fork, including Bloody, Sharpes, Little Cedar, Thurman, Mercer, Crocker, and Rock creeks. To the west, Diamond Creek arises north of Diamond Springs, and it and Middle Creek join the Cottonwood River near Elmdale. Coyne Branch enters the Cottonwood River south of Clements, and Cedar Creek is added east of Cedar Point.

A development campaign to build Cedar Point Reservoir in the 1960s would have dammed Cedar Creek and destroyed what many biologists consider a benchmark or reference stream. The Flint Hills would have lost a relatively undisturbed and unpolluted stream rich with aquatic life and a useful reference for comparison to similar streams now evidencing impact by humans. Headwaters of the Cottonwood River arise in western Marion County. The North Cottonwood is dammed by Marion Reservoir and the South Cottonwood joins downstream from the dam near Marion. Doyle Creek merges with the Cottonwood just east of Florence.

To the south, in Butler County, the headwaters of the Walnut River arise west and northeast of Cassoday. The Walnut is impounded by El Dorado Lake, along with several tributary creeks, including Cole, Durechen, Satchel, Bemis, Harrison, and Shady, and it eventually joins the Arkansas River east of Arkansas City in Cowley County.

In eastern Butler County, east of

Cassoday, lie the headwaters of the West Branch of Fall River, including Battle, Cat, Hog, and Ivanpah creeks. A few miles to the east, near Lapland in Greenwood County, run headwaters of the East Branch of Fall River and its tributary creeks, namely Oleson Creek and Swing Creek. The West Branch and East Branch intersect to form Fall River just northwest of Eureka. Spring Creek, Honey Creek, and Otter Creek join downstream. Fall River is impounded by Fall River Dam,

A walk alongside a Flint Hills stream could provide glimpses of stoneroller minnows, orangethroat darters, creek chubs, and longear sunfish...

creating Fall River Lake in southern Greenwood County, and eventually joins the Verdigris River south of Neodesha.

Headwaters of the Verdigris River develop at the junction of Chase, Lyon,

These distinctive streams vary markedly with the seasons, too. Spring freshets, summer drought, the cooler temperatures of autumn, and winter ice cover create predictably variable environments that highlight the remarkable and intriguing life histories and adaptations of their inhabitants.

and Greenwood counties near Kenbro and Texaco Hill. The North Branch and South Branch of the Verdigris unite to form the Verdigris River just northwest of Madison. Halderman, Long, Van Horn, Green, and West creeks join downstream. The Verdigris River and Walnut Creek are impounded by the Toronto Dam, along with Dry Creek, Brazil Creek, Cedar Creek, and Miller Creek, forming Toronto Lake.

The Elk River, arising in northwestern Elk County, gathers waters from Clear, Rock, Pawpaw, and Game creeks (near Howard) and Wildcat Creek (near Elk Falls) before impoundment by Elk City Lake and finally joining the Verdigris River at Independence.

Headwaters of the Caney River arise north of Grenola in Elk County. Tributary Otter Creek begins in western Cowley County to join the Caney River north of Cedar Vale in Chautauqua County. The Caney flows into Osage County, Oklahoma, and is joined by tributaries Cedar Creek, Buck Creek, and Pond Creek before it is impounded by Hulah Lake. The Caney River eventually intersects with the Verdigris in Rodgers County, Oklahoma, before merging with the Arkansas River near Ft. Gibson, Oklahoma.

Hundreds of other creeks, too numerous to mention, traverse the Flint Hills. The unimpounded portions of Flint Hills rivers and streams harbor a fascinating array of organisms that typically go unseen by the occasional

visitor. These include algae, ferns, higher plants, insects, crustaceans, mollusks, fishes, frogs, turtles, birds, and mammals adapted to the prairie ecosystem. Insect communities include amazing fliers like the extraordinary semi-aquatic damselflies and dragonflies, but also incorporate aquatic larvae of mayflies, stoneflies, and caddisflies that are essential processors of organic material forming an important link in the stream's food web. Other key components of the macro-invertebrate community of Flint Hills streams include numerous crayfish, snails, and freshwater mussels. A walk alongside a Flint Hills stream could provide glimpses of stoneroller minnows, orangethroat darters, creek chubs, and longear sunfish, cricket frogs and leopard frogs, slider turtles, painted turtles, snapping turtles, and perhaps even a watersnake. Kingfishers often fly overhead. Beavers might be spotted constructing a lodge; a nighttime visit could reveal a raccoon. These distinctive

streams vary markedly with the seasons, too. Spring freshets, summer drought, the cooler temperatures of autumn, and winter ice cover create predictably variable environments that highlight the remarkable and intriguing life histories and adaptations of their inhabitants.



LONG-EAR SUNFISH
Joe Tomelleri

David Edds teaches zoology at Emporia State University. His research interests lie in aquatic biology and fish ecology. Following biology studies at the University of Kansas, he served in the Peace Corps in Nepal, then did post-graduate work at Oklahoma State University. A native Kansan, his great-great grandparents homesteaded five miles north of the Little House on the Prairie near Independence in the 1870s.