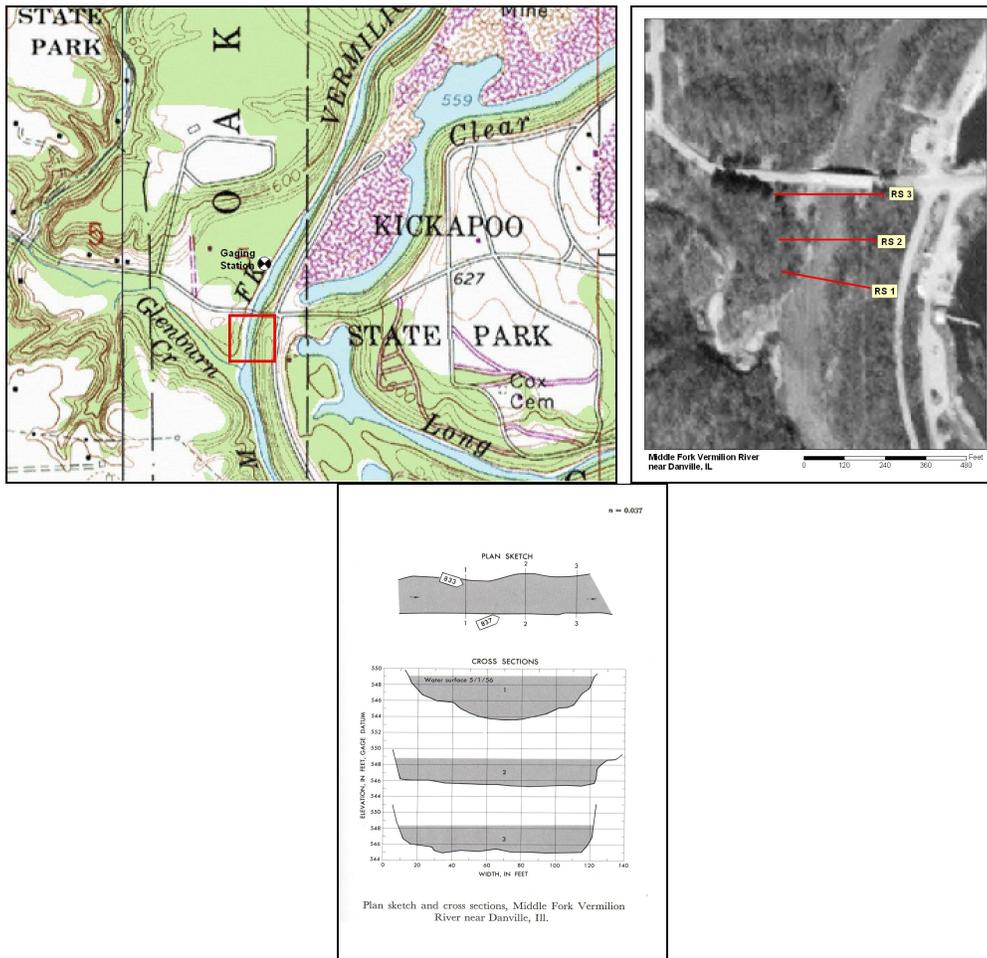


Middle Fork Vermilion River near Danville, IL



Study Reach.--The study reach is located from the downstream side of bridge on Kickapoo State Park Road to above Glenburn Creek. The bridge is downstream of the site at Middle Fork Vermillion River above Oakwood. Note that this site was studied by Barnes and only his data are reported here. The reach starts from 260 ft downstream of the Kickapoo State Park Road bridge and extends to approximately 30 ft downstream of the bridge, as shown in quadrangle map on the top left. Barnes report included three cross sections for this study reach (see plots above). The channel alignment, approximate variations in channel width and bank conditions, and locations of the cross sections are shown in the aerial photo on the top right. The length of the study reach is 230 ft.

Gage Location.--Lat 40°08'12", long 87°44'44", in NE1/4 SW1/4, sec.5, T.19N., R.12W., Vermilion County, Hydrologic Unit 05120109, at downstream side of bridge on Kickapoo State Park Road, 1.0 mi upstream from Interstate Hwy 74 bridge, 2.0 mi northeast of Oakwood, and at mi 31.7. Section 1 is 30 ft downstream from bridge.

Drainage Area.--432 sq mi.

Gage Datum and Elevations of Reference Points.--Gage is 544.42 ft above NGVD of 1929.

Stage, Discharge Measurements, and Computed n-Values.--High water marks were used to define the water-surface profile at sections 1, 2, and 3 in Barnes report. The n-values reported in Barnes report are listed in the following table.

Date of Observation	Discharge (ft ³ /s)	Average Cross Section Area (ft ²)	Hydraulic Radius (ft)	Mean Velocity (ft/s)	Slope	Coefficient of Roughness <i>n</i>
5/1/1956	1620.0	378.7	3.22		0.003100	0.037



Description of Channel.--This channel is natural. The streambed consists of sand-gravel mixture with scattered boulders. Cross sections are generally in a wide rectangular shape. The bottom width of the channel is about 100 ft. The banks are approximately 6 ft high and have a top width varying from 100 to 120 ft. Banks consist of sand-gravel mixtures with a steep slope. The top of the banks are lined with trees and small underbrush and alluvial sand deposits at toe of the bank. The study reach is straight.

Floods.--Maximum discharge, 15,500 ft³/s, Apr. 13, 1994, gage height, 20.46 ft.

Estimated n-Values using Cowan's Approach.--0.031 ~ 0.046