

Project Name | (3-006-A) Technical Resource Sharing **Date** | 6-3-2021
To / Contact info | Mike Kinney, CLFLWD Administrator
Cc / Contact info |
From / Contact info | Meghan Funke, PE, PhD; Trevor Rundhaug, EIT
Regarding | Sunrise River Headwaters supporting data

EOR conducted a GIS analysis of watercourse length and drainage area of the major tributaries of the Sunrise River to provide supporting data for the determination of the headwaters of the Sunrise River. EOR summarized the total length of each tributary to the outlet of the Sunrise River at the St. Croix River using the MN DNR Strahler stream order layer, and the total drainage area of each tributary to the outlet of the Sunrise River at the St. Croix River using the MN DNR minor subwatershed layer (see Table 1 and Figure 1 below). According to these analyses, Washington Judicial Ditch 6 extending south from the east basin of Forest Lake has the longest watercourse length and drainage area of the major tributaries of the Sunrise River. In addition, the Comfort Lake-Forest Lake Watershed recently updated the hydrologic boundary of WJD-6 and determined it extends beyond the MN DNR minor subwatershed layer, further supporting that WJD-6 has the largest drainage area of the major tributaries of the Sunrise River. Based on both total watercourse length and drainage area, we recommend that WJD-6 be named the headwaters of the Sunrise River.

Table 1. Sunrise River tributary watercourse total lengths and drainage areas (source: MN DNR Strahler stream order layer and MN DNR minor subwatersheds)

Sunrise River Tributary	Watercourse total length (miles)	Approximate drainage area (sq. mi.)
Main Stem, Sunrise River Pool 1 to Outlet	28.7 mi.	--
• North Branch	30.1 mi.	77.9 sq. mi.
• South Branch	36.1 mi.	123.5 sq. mi.
• West Branch	41.9 mi.	127.2 sq. mi.
• Main Branch, via Bone Lake	46.9 mi.	128.9 sq. mi.
• Main Branch, via WJD-6	47.3 mi.	

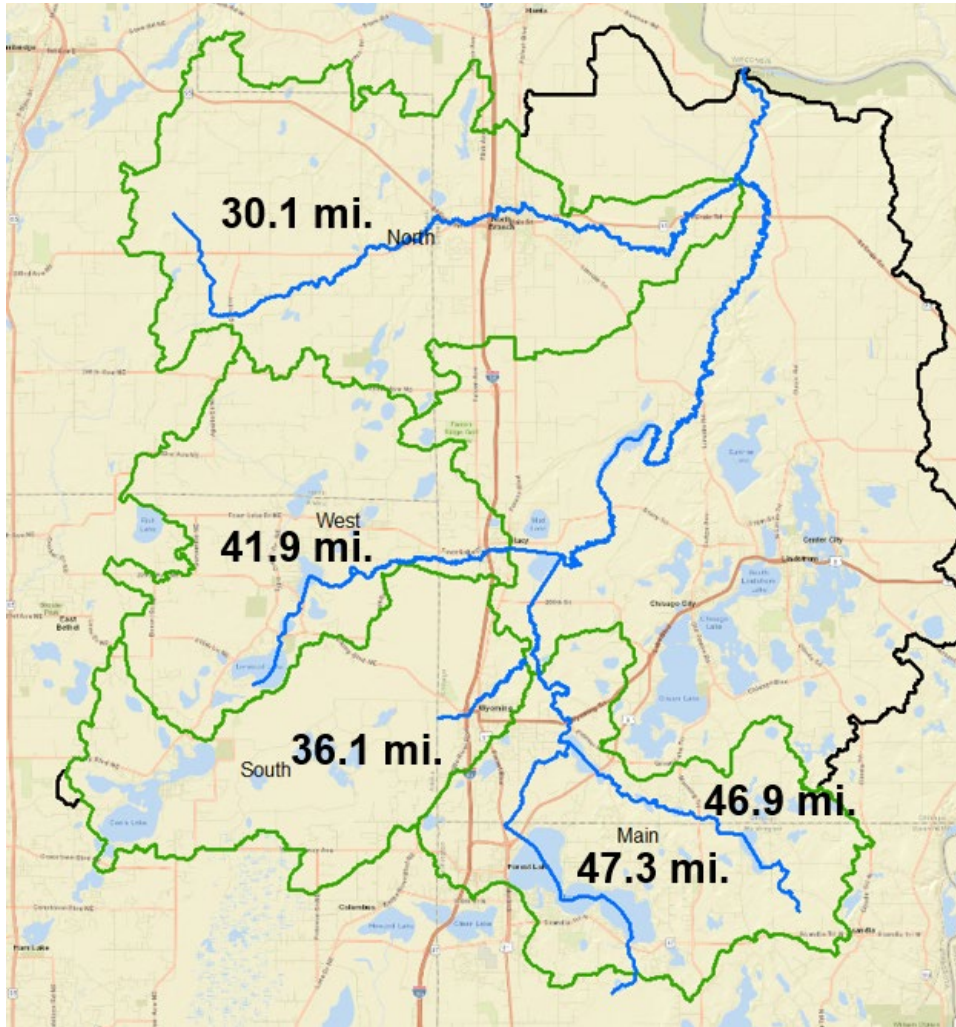


Figure 1. Sunrise River tributary watercourse total lengths and drainage areas (source: MN DNR Strahler stream order layer and MN DNR minor subwatersheds)