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The cover image is of Pike Island at Fort Snelling State Park in Minnesota, looking west, showing the Mississippi River. Photographer Brett Whaley. (CC BY-NC 2.0)

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THE ST. LOUIS RIVER

By Alex Messenger

Northern Minnesota's St. Louis River is a storied waterway, an integral part of the state's industrial boom and, at the western terminus, the veritable inception of the Great Lakes' ecological and industrial machine. Within its relatively short length (194 miles) from its source to Lake Superior, and the truncated time frame of 300 years since European contact and colonization, the St. Louis River is emblematic of historical patterns of use and exploitation in the region, as well as recovery attempts, for rivers across the state of Minnesota and indeed much of the country.

Kayakers paddle the whitewater of the St. Louis River in Jay Cooke State Park. Image courtesy of Alex Messenger Photography. http://messengerphotography.com

Jay Cooke State Park Suspension Bridge, 1929. Image courtesy of University of Minnesota Duluth, Kathryn A. Martin Library, Northeast Minnesota Historical Center Collections.

Visitors to Jay Cooke State Park watch kayakers from the iconic Swinging Bridge. Image courtesy of Alex Messenger Photography. http://messengerphotography.com

The sun rises over the Upper St. Louis River.
Image courtesy of Alex Messenger Photography. http://messengerphotography.com

I first experienced the St. Louis River when I was very young, running across the swinging bridge at Jay Cooke State Park, feeling the sway of the bridge and marveling at the power of the swift current below. Years later, I learned how to paddle whitewater in a canoe, running the rapids between Scanlon and the Thomson Reservoir just north of the park. I was humbled by the power of the river, the excitement of finding clean lines, and the unexpected thrill of missing them. That's the Lower St. Louis. The Upper St. Louis River has a different feeling entirely. It has rapids, too, swift sections where the water bubbles up over rocks and debris, but it is a lazy flow, bordered by soil berms covered in ferns and plants where it can feel like a canal. There's a magic in the river at sunrise, when the sunlight spills through the steam of a river waking from the cool night to greet the warmth of day.

St. Louis River at Thompson, Minnesota, near Duluth, 1908.
Digitally enhanced image courtesy of University of Minnesota Duluth, Kathryn A. Martin Library, Northeast Minnesota Historical Center Collections.

Lumberjacks and river log drive on St. Louis River, near Duluth, Minnesota, 1888.
Digitally enhanced image courtesy of University of Minnesota Duluth, Kathryn A. Martin Library, Northeast Minnesota Historical Center Collections.

Chambers' quarry at Fond du Lac, 1881.
Digitally enhanced image courtesy of University of Minnesota Duluth, Kathryn A. Martin Library, Northeast Minnesota Historical Center Collections.

A river is a living thing, after all, never the same as it once was, nor what it will be in the future; a river is always and ever a shifting version of itself. The St. Louis River is no different in that regard. It winds sinuously through the Iron Range of Minnesota's Arrowhead Region, past mines of olde and modern mines alike, past vast logging fields once stripped of timbers and since restored, past fertile grounds of the Sax Zim Bog that is prime habitat for dozens of bird species, down to one of the most biologically productive estuaries in the Great Lakes. While industry booms and busts, the river remains.

Slate and greywacke bedrock plates rise from the St. Louis River in Jay Cooke State Park. Image courtesy of Alex Messenger Photography. http://messengerphotography.com

No. 1, Log Rollway and Sawmill Red Cliff Lumber Company, Duluth, Minnesota. Image courtesy of University of Minnesota Duluth, Kathryn A. Martin Library, Northeast Minnesota Historical Center Collections.

From its source 13 miles east of Hoyt Lakes, the St. Louis River wanders southwest, looping south from the Laurentian Divide, from which all waters flow north into Hudson's Bay, toward the westernmost edge of the St. Lawrence Divide, from which waters spill into the Great Lakes and eventually the Atlantic Ocean. From there, the St. Louis turns back to the southeast, dipping deeper into the Virginia, Thomson, and Rover formations of shale, siltstone, graywacke, and other volcanic rocks that formed some two billion years ago. As the river nears its end, it drops precipitously over 500 vertical feet, past power stations, over waterfalls, and through a popular 3.4 mile-long section of class I-IV rapids, one of the few run by whitewater rafts in the state. From there, the St. Louis flows into Minnesota's iconic Jay Cooke State Park, before cascading down to the St. Louis River Estuary, and finally, the mighty Lake Superior, just 50 miles due south from where it started.

Jay Cooke State Park Suspension Bridge, 1929.
Image courtesy of University of Minnesota Duluth, Kathryn A. Martin Library, Northeast Minnesota Historical Center Collections.

The St. Louis has been home to the people of Minnesota and Wisconsin since the glaciers began receding some 14,000 years ago. A revered waterway known as Gichi Gami-ziibi (Great-lake River) to the Ojibwe people, the river and its estuary were an important hub of trade and settlement for centuries before Europeans first made contact. When settlers came and began to extract resources, the St. Louis became the linchpin of whatever trade was booming. In the late seventeenth century, it was used for the fur trade, and eventually became the site of the American Fur Company's headquarters at Fond Du Lac, just upstream from Lake Superior. When loggers began to harvest the stands of old growth from northern Minnesota's seemingly endless forests, the river became one of the main arteries of the timber trade, ferrying vast flotillas of felled trees downstream to feed the insatiable appetites of shipyards, buildings, bridges, and paper mills in the burgeoning industrial twin ports of Duluth, Minnesota and Superior, Wisconsin. The timber boom slowed with the Great Depression of the 1930s and nearly died out. Industry picked back up again during the mid twentieth century; this time it was minerals that were sought as the immense deposits of the Iron Range were exploited. As populations grew, the river was dammed and harnessed for hydroelectric purposes, spinning great turbines and powering the towns and industry of the region. Downstream in the estuary, a U.S. Steel mill and coking operation pumped out tons of contaminated sludge into the riverbed.

The iconic Swinging Bridge over the St. Louis River at Jay Cooke State Park. Image courtesy of Alex Messenger Photography. http://messengerphotography.com

By the 1980s, the river and its estuary were in dire need of reclamation. Decades of misuse, dredging, industrial runoff, neglect, and other adverse effects of mining and industry had nearly destroyed the ecology of the river. The air at the river was thick with acrid odors and the water was cast with unnatural colors. The St. Louis is the largest tributary to Lake Superior in the United States (Canada's Nipigon River holds the title for largest internationally). Thus the health of the river is an important part of the health of the Great Lakes as a whole. After the river was formally recognized as an Area of Concern and targeted for reclamation, organizations like the Western Lake Superior Sanitary District were formed and began work on righting the wrongs of the previous century.

After decades of hard work, residents and visitors can now reap the benefits, as cleaner water has allowed fish and other wildlife to return to the river. Covering 12,000 acres of water and wetland, the St. Louis River Estuary is once again one of the most biologically productive in the Great Lakes.

Kayakers paddle the whitewater of the St. Louis River in Jay Cooke State Park. Image courtesy of Alex Messenger Photography. http://messengerphotography.com

In the spring of 2012, a great flood saturated the region, when over 10 inches of rain fell in a single day, nearly double the previous record for a 24-hour rainfall. The St. Louis River did as rivers do in flood stage. It rose and overflowed its banks, breaking the previous flood of record by nearly a foot and topping out at 16.6 feet. It searched and probed for easier ways down to Lake Superior. It scoured the earth around it, sloughing entire hillsides, ferrying trees downstream once more, destroying highways, bridges, and other infrastructure throughout its run, but wreaking the most havoc as it dropped down to the great lake. There it flooded the nearby towns, and the hydroelectric station, filling the powerhouse nearly to the second level with thick muck. At its peak, stations reported the river flowing at 45,000 cubic feet of water per second, destroying its average of 3,710 and the previous maximum flow of 26,900 cubic feet per second, set in 1908. It ripped the iconic Swinging Bridge at Jay Cooke State Park from its Civilian Conservation Corps-era ramparts and left it shredded. The water left a different landscape behind, and a region reeling from the damage. Since then, the river has calmed, returning to its swift and steady flow. Most of the repairs have been made, but there remains strong evidence of the flood. Sections of trails, like the Superior Hiking Trail, have been re-routed, roads have been rebuilt, bridges re-made; but Highway 23, formerly a scenic route that followed the St. Louis through Jay Cooke State Park, remains closed, an enduring testament to the power of the river.

Kayakers paddle the whitewater of the St. Louis River in Jay Cooke State Park. Image courtesy of Alex Messenger Photography. http://messengerphotography.com

Kayakers view pelicans in the St. Louis River Estuary.
Image courtesy of Alex Messenger Photography. http://messengerphotography.com

A pelican rests in front of a processing plant on the St. Louis River Estuary.
Image courtesy of Alex Messenger Photography. http://messengerphotography.com

Paddler Brad Little soaks in the sunshine on a break on the shore of the St. Louis River Estuary. Image courtesy of Alex Messenger Photography. http://messengerphotography.com

Recently, it seems people have returned to perhaps their original appreciation of the St. Louis. The river and its vast estuary now host a wide variety of outdoor enthusiasts, from hikers exploring its shores, to more adventurous types in kayaks, canoes, and even whitewater rafts, moved to feel the rush of the river through paddle and oar. Still at risk, there is more work to be done, but it is already being enjoyed again by paddlers, anglers, campers, hikers, and boaters. Efforts are now underway to establish the St. Louis River Estuary as a National Water Trail, with the goal of bringing more users and resources to protect the river.

Alex Cole, St. Louis County Rescue Squad, paddles the Upper St. Louis River on a search for a missing canoeist.
Image courtesy of Alex Messenger Photography. http://messengerphotography.com

United States Steel mill, Duluth, Minnesota, 1956.
Image courtesy of University of Minnesota Duluth, Kathryn A. Martin Library, Northeast Minnesota Historical Center Collections.

The biggest remaining cleanup project in the estuary is the removal of contaminated sediment left by the closed steel mill, now a Superfund site. This will cost $69 million, a little over half of which would come from the EPA, the remainder being covered by U.S. Steel. Three decades of work and planning are at risk though, as political threats loom that would cut Great Lakes Restoration Initiative funds. If the clean-up efforts move forward, the St. Louis River Estuary restoration is slated for completion by 2020, some 50 years after that mill closed.

Ironically, as one of the last major cleanup efforts from the last century nears its possible conclusion, proposals are being made for a new type of mining operation upstream. This time it is sulfide-ore mining, which results in acid mine runoff and increased levels of heavy metals and sulfates downstream. This time heated debates are taking place about the future of the river, the estuary, and the lake. Once again, the river is an area of concern and its future hangs in the balance.

For further reading:

Logging history: King, Frank A. 1981. Minnesota Logging Railroads. Minneapolis: University of Minnesota Press. http://www.dnr.state.mn.us/forestry/anniversary/peaklogging.html

General river flow data: https://waterdata.usgs.gov/usa/nwis/uv?04024000

2012 USGS Flood Data and Review: https://pubs.usgs.gov/sir/2012/5283/sir2012-5283.pdf

Geology of Minnesota map: http://geo-site.net/mn/EX_Geology_2_files/small%20geology%20map%20minnesota_1.jpg

St. Louis River watershed: https://www.pca.state.mn.us/water/watersheds/st-louis-river; http://www.lakesuperiorstreams.org/streams/stlouis.html

Minnesota's divides: http://blogs.twincities.com/politics/files/2015/06/divide.jpg

St. Louis River general information: https://www.americanrivers.org/river/st-louis-river/

Maps: http://files.dnr.state.mn.us/maps/canoe_routes/stlouislower.pdf; http://files.dnr.state.mn.us/maps/canoe_routes/stlouisupper.pdf

Jay Cooke State Park information: http://www.dnr.state.mn.us/state_parks/jay_cooke/narrative.html; http://blogs.mprnews.org/statewide/2013/11/jay-cooke-state-parks-iconic-bridge-swings-again/

St. Louis River Estuary information: http://stlouisriverestuary.org/; http://www.startribune.com/minnesota-s-st-louis-river-on-10-most-endangered-list/298840211/

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About the Author

Alex Messenger is a Duluth, Minnesota-based writer and photographer. His love of adventure, nature, and culture has taken him across the globe, but the north woods and canoe country have always been some of his favorite subjects.