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Great Lakes Basin Fish Habitat Partnership

RIPARIAN ACQUISITION AND MANAGEMENT IN MINNESOTA'S LAKE SUPERIOR WATERSHED

Based upon June 30, 2014 Completion Report

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Project funding provided by:

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***Please note:** Hyperlinks have been inserted throughout this electronic document to easily guide the reader to areas of interest. To use the hyperlinks feature, please read the following set of instructions: 1) pass the cursor over the highlighted hyperlink text (e.g. Figure X), 2) left click on the highlighted text to navigate to the desired report feature, 3) when finished, press the Alt and left arrow key simultaneously to navigate back (this step may have to be repeated if more than one page was viewed after the hyperlink was clicked).*

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Abstract

Citizens and professional fish managers have consistently listed acquisition of easements that provide fishing access and riparian protection as one of the highest priorities for resource conservation in Minnesota's Lake Superior watershed. This report summarizes the accomplishments and activities completed during implementation of the Great Lakes Basin Fish Habitat Partnership (GLBFHP) Grant entitled Riparian Acquisition and Management in Minnesota's Lake Superior Watershed. Funds from the GLBFHP grant were largely used to support Minnesota Department of Natural Resources (MN DNR) temporary staff to implement the acquisition process while funds from the State of Minnesota were used to pay for easements from willing landowners.

The overall goal for this project was to develop a stream riparian plan for easement acquisition and management in much of Minnesota's Lake Superior watershed. The four major objectives were to: 1) Work with the inland MN DNR fishery management Areas to prioritize the acquisition of new riparian easements on Minnesota's Lake Superior tributaries and create an atlas depicting those priorities; 2) Use MN DNR funds to acquire as many high priority new easements as possible; 3) Inventory, survey and enter into a statewide database current information on the existing and newly acquired easements and; 4) Where feasible, begin work with conservation and angling organizations to protect and restore some of the most critical riparian habitat discovered during this process.

An atlas was created that identified high priority sites for targeted easement acquisition for 31 separate watersheds of streams tributary to Lake Superior. A total of 178 land owners were contacted and 48 expressed interest in a follow-up conversation. Of those expressing interest, 22 easements have been acquired, 10 are in the final stages of being acquired, 8 are tabled due to lack of funding and 7 declined to move forward for various reasons. Easements acquired or in progress total 11.4 miles of stream length, and 208 acres of riparian habitat, at a cost of approximately $785,000. The project increased connectivity of existing easements through strategic acquisition. Connectivity was increased to 95 miles of stream, an almost 10 fold increase over the actual miles of easements purchased. Baseline monitoring and management recommendations were completed on 32 easements, and partnerships with angler and conservation groups have been formed to implement some of the habitat recommendations.

All objectives put forth in the project proposal were met or surpassed during the duration of this project. The conservation easements acquired during this project are perpetual and should stay in the public trust for perpetuity. It will be interesting to see how the landscape changes over the next 100 years and how these easements influence the stream corridors they are designed to protect. The general support received from conservationists, anglers, the general public and LUGs has been extremely gratifying.

INTRODUCTION

This report summarizes the accomplishments and activities completed during implementation of the Great Lakes Basin Fish Habitat Partnership (GLBFHP) Grant entitled *Riparian Acquisition and Management in Minnesota's Lake Superior Watershed.* The duration of the GLBFHP grant (F10AC00267) was initially from July 1, 2010 – June 30, 2013. Due to an unforeseen state shutdown, staff turnover and the need for hiring freeze approvals, the completion date for the grant was extended for an additional year to June 30, 2014. The GLBFHP is one of many habitat related partnerships nationwide that falls under the umbrella of the National Fish Habitat Plan (NFHI) (NFHAP 2012), administered by the United States Fish and Wildlife Service (USFWS). This grant was specifically administered through the USFWS Fish and Wildlife Conservation Office in Ashland WI, and supported using funds from both the USFWS and the Great Lakes Restoration Initiative (GLRI). The GLBFHP grant was largely used to support Minnesota Department of Natural Resources (MN DNR) temporary staff to carry out the project. No funds from the GLBFHP were used to directly purchase easements. Funds used to acquire riparian easements from willing landowners were obtained from the State of Minnesota. This funding partnership supplied the required match for the GLBHFP grant and allowed the MN DNR to actively seek out easements that best fit the criteria established for implementation of the GLBFHP grant.

Riparian areas have long been considered among the most important and diverse portions of aquatic and forest ecosystems. They support high soil moisture, cool stream temperatures and provide a diversity of associated vegetation and wildlife. When intact, they provide bank stability, shade, stabilized flows, woody debris and nutrients. They are the last line of defense against poor land use practices in the upper watersheds. Riparian areas also provide unique habitat and act as corridors of connectivity for a large diversity of wildlife species (birds, mammals, reptiles and amphibians).

Acquisition of easements that provide fishing access, riparian protection, and shore land management is one of the highest priorities for resource conservation in Minnesota's Lake Superior watershed (MN DNR 2007). In the *Fisheries Management Plan for the Minnesota Waters of Lake Superior* (Schreiner et al. 2006) a major objective is to "Protect, restore and enhance riparian areas in the Lake Superior Basin" The riparian easements acquired during this project directly addresses that concern. In 2008, the Outdoor Heritage Fund was established with the passage of the Clean Water Land and Legacy Amendment, to fund fish and wildlife habitat projects. The program is directed by the Lessard-Sams Outdoor Heritage Council (LSOHC) which allocates approximately $80 million dollars annually from a dedicated portion of state sales tax receipts. In 2010, the LSOHC appropriated approximately $1.7 million dollars for riparian acquisition, of which approximately $1 million was earmarked for riparian easement acquisition in the Lake Superior watershed. The GLBFHP grant was used to hire temporary staff to quantify, prioritize and implement the acquisition, monitoring and management of riparian easements because funding from the LSOHC could not be spent on MN DNR staff positions. The LSOHC did appropriate funds for the outright purchase of easements in riparian areas and was used as match for the GLBFHP grant.

Riparian easements in Minnesota have historically fallen into two categories, conservation easements, which protect the riparian corridor and provide angler access; and fishing easements, which only provide angler access. All newly acquired easements are conservation easements, which are administered under the MN DNR Aquatic Management Area (AMA) program. The scope of this project included most of the tributaries that flow directly into Lake Superior, locally referred to as the "North Shore Streams". Initial efforts focused on areas below the natural barriers (which prevent upstream movement of fish from Lake Superior) because this is where most angling activity occurs. However, many high priority easements were purchased above-barriers as well.

The criteria developed to prioritize acquisition of new easements included:

1. Connectivity to existing easements, thus creating a longer uninterrupted riparian corridor.
2. Increased angler access from roads, cart-ways, public land, and other permanent access sites.
3. Riparian areas that encompassed unique or critical habitat (ex. large springs, major known fish spawning sites, etc.).
4. Sites where there was a high interest and commitment to habitat improvement by local units of government (LUGs), conservation and/or angling organizations.

The overall goal for this project was to develop a stream riparian plan for easement acquisition and management in much of Minnesota's Lake Superior watershed. The four major objectives of this project were to: 1) work with the inland MN DNR fishery management Areas to prioritize the acquisition of new riparian easements on Minnesota's Lake Superior tributaries, and create an atlas depicting those priorities; 2) use the LSOHC money to acquire as many high priority new easements as possible; 3) inventory, survey and enter current information on the existing and newly acquired easements into a statewide database and 4) where feasible, begin work with LUGs, conservation and angling organizations to protect and restore some of the most critical riparian habitat discovered during this process. Most of the efforts for this project were spent on objectives 1-3 since the unexpected opportunity to acquire many new easements with the large amount of funding (~$1 million) supplied by the LSOHC became available.

The format of this report is unique since it is designed to serve as both the Completion Report for the GLBFHP grant and as the stream riparian plan for future easement acquisition and management in Minnesota's Lake Superior watershed. The report was published in an electronic format so the various maps of individual watersheds can be accessed from the atlas. Hyperlinks have been inserted to easily guide the reader to areas of interest. To use the hyperlinks feature, please read the following set of instructions: 1) pass the cursor over the highlighted hyperlink text, 2) left click to navigate to the desired figure or table, 3) when finished, press the Alt and left arrow key simultaneously to navigate back.

This electronic format will also make it possible to update and display new easements as they are acquired in the future. In addition, the Methods section and Appendices will serve as an operational guide for MN DNR staff when pursuing new easement acquisitions, or when periodically monitoring existing easements for inclusion in the statewide database.

METHODS

Watershed and Parcel Priorities

Sub-watersheds within the Lake Superior watershed were prioritized for easement acquisition based on: 1) relative availability of habitat for use by the Lake Superior fish community and resident fishes, 2) quality of fish habitat, 3) demonstrated use by anglers, 4) amount of private land in watershed, 5) relatively large size of individual parcels, 6) potential to increase connectivity and provide new angler access sites, 7) direct proximity of streams to Lake Superior shoreline (e.g. North Shore streams favored over St. Louis River tributaries and city of Duluth streams). The initial step in the process was to meet with staff from the three inland fisheries Areas to discuss and identify high priority watersheds. The inland Areas include Duluth, Finland and Grand Marais. Throughout this document the Lake Superior shore will be divided into three sections, which will be identified using the names of the three inland fish management Areas (Figure 1).

Once watersheds had been selected within each Area, maps depicting ownership of stream riparian property were developed using ArcMap 10.2 software. Maps contained three riparian classifications depending on the stream. Classifications included public ownership or easements (lands owned by the federal, state and county, or lands with existing MN DNR easements); private ownership (lands not accessible by the public); and privately owned parcels targeted as high priority easement acquisitions. Ownership was determined using a combination of MN DNR 2008 Quick Layers: 1) Parcels in Minnesota (Figure 2), 2) State AMA Acquisitions - Fisheries Sub 40 (Figure 3); along with county parcel website information, county plat books, and local knowledge.

Private parcels of stream riparian property within each watershed were prioritized into three categories that were considered to be the most beneficial for MN DNR easement acquisition. Priority status of the parcels was depicted using ArcMap (Figure 4). Priority 1 status was given to parcels with relatively high quality fisheries habitat, increased connectivity with public land and existing easements, increased angler access, and protected critical riparian habitat for fish and wildlife. Sites identified for potential habitat improvement by various agencies and organizations were also included. Most priority 2 parcels possessed similar qualities to priority 1, but could only be accessed after an easement for a priority 1 parcel was purchased. Priority 2 parcels also included those sites where an easement already existed on one side of the stream, or where the habitat was considered of moderate quality for stream fisheries. Priority 3 parcels had minimal or poor quality habitat that was considered unsuitable for healthy trout populations (i.e. high water temperatures and/or low to no seasonal flow). Priority 3 parcels may also have been located in congested areas with very small lot sizes or where access was extremely difficult.

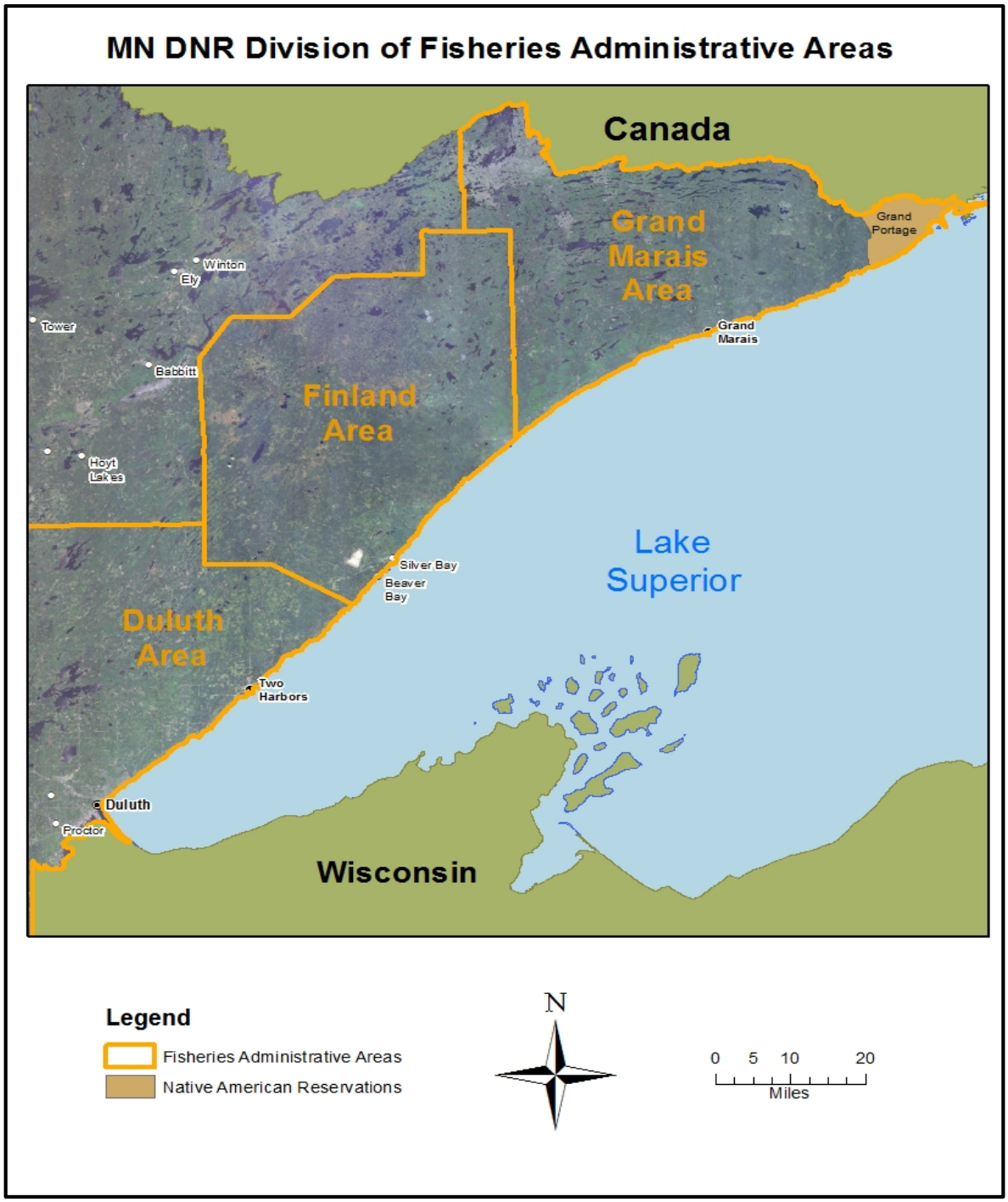


FIGURE 1. Minnesota Department of Natural Resources inland Fisheries Areas along the Lake Superior shoreline.

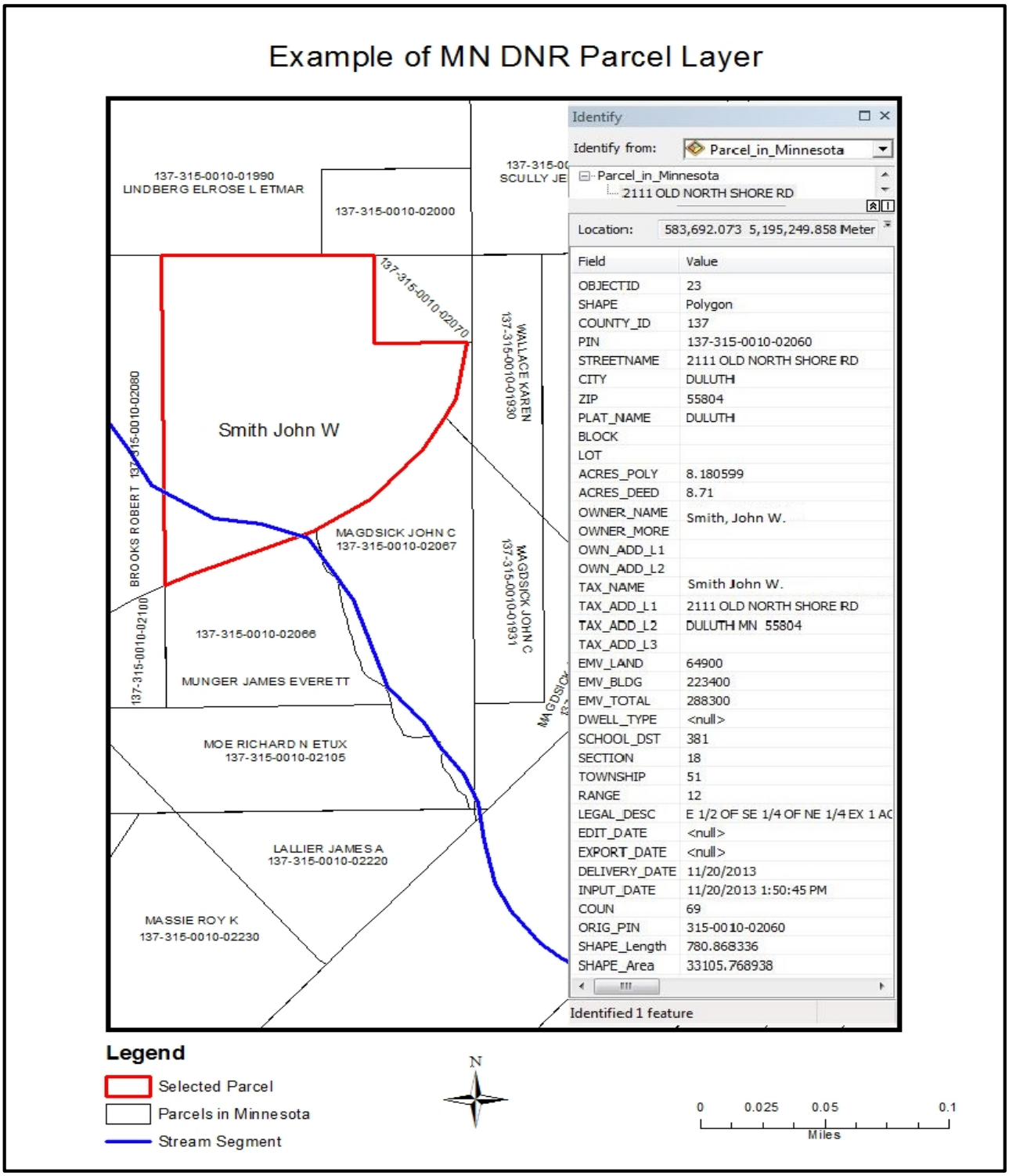


FIGURE 2. Example of the MN DNR ArcMap 10.2 Quick Layer “Parcels in Minnesota”.

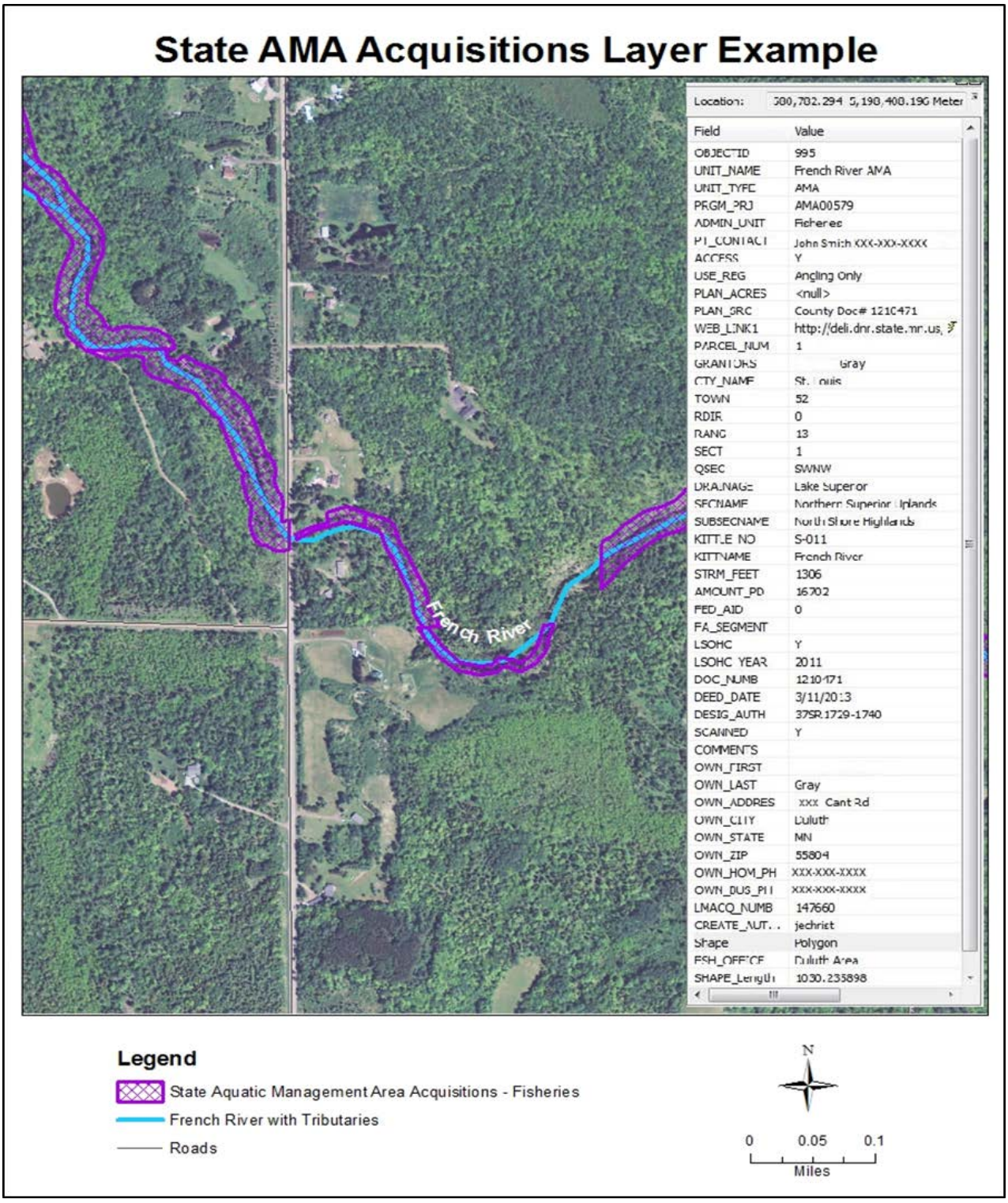


FIGURE 3. An example of the MN DNR ArcMap 10.2 Quick Layer "State AMA Acquisitions - Fisheries (Sub 40)".

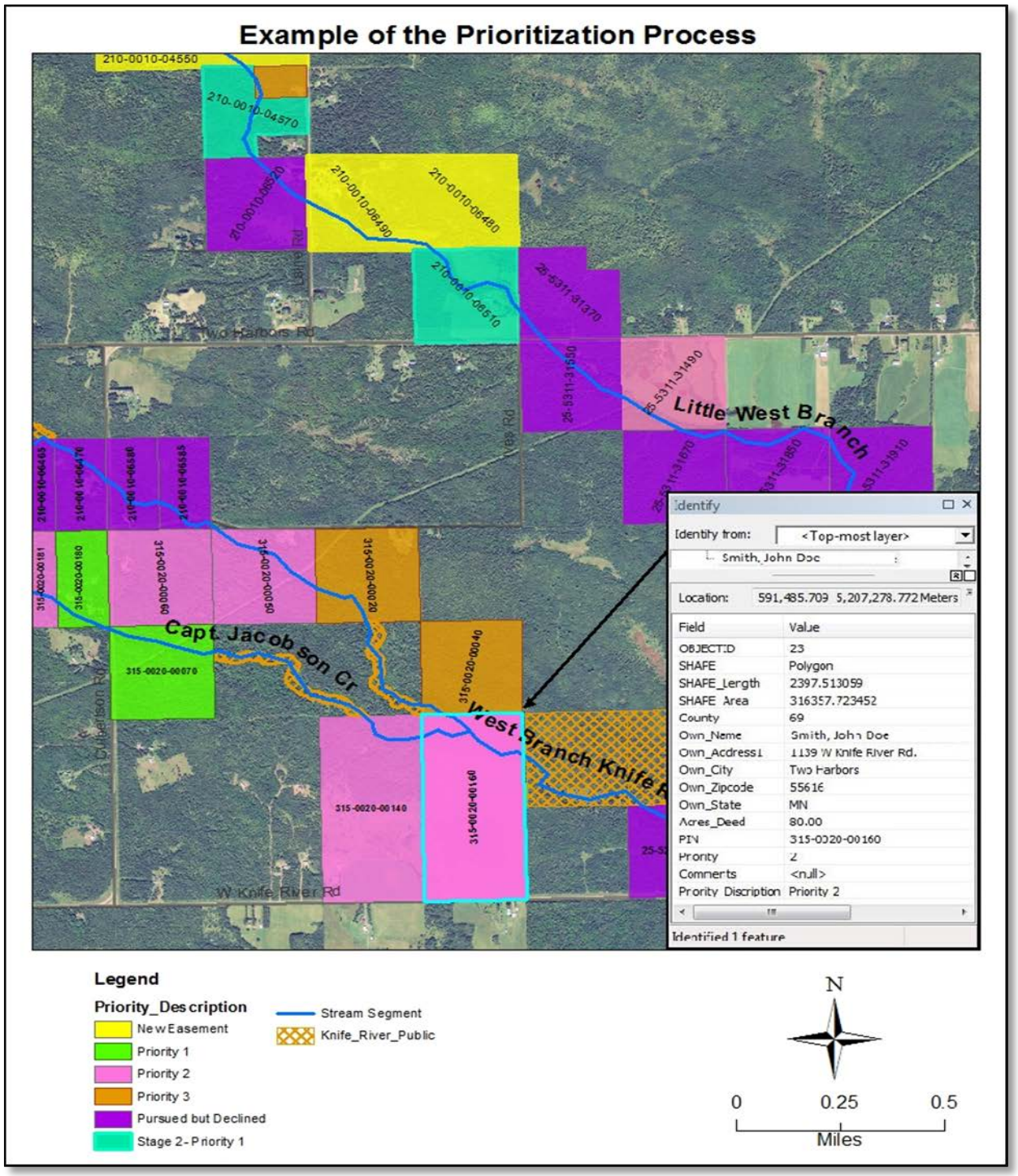


FIGURE 4. Example of how parcels were prioritized for review with Area staff using ArcMap project.

Initial Landowner Contact and Estimating Easement Value

Landowners of priority 1 parcels were contacted on 27 of the 31 prioritized watersheds. Priority 1 landowners were sent a packet that contained: 1) an initial contact letter which briefly explained the purpose and objectives of the riparian easement program (Figure 5); 2) a map of the proposed easement area including stream channel length and riparian acreage (Figure 6); 3) a brochure responding to frequently asked questions about easements, describing easement benefits for cold water fisheries, and outlining the general terms of the easement (Figure 7); and 4) a self-addressed postcard expressing the level of landowner interest in the conservation easement program (Figure 8).

An ArcMap project was generated for each priority 1 parcel that depicted approximate stream footage and acreage included in each easement. The stream segment was then buffered and clipped to fit within the property using an ArcMap buffering tool found in MN DNR Toolbox. Acreage was calculated using ArcMap Calculate Geometry Feature to convert the shape area into acres. The value of each easement was determined under Minnesota Statute 84.0272 (Appendix A), by a two part calculation which uses an Excel spreadsheet. Part one multiplies the linear feet of stream included in the easement by $5. Part two multiplies the total acres encompassed by the easement by the estimated market value per acre in the township where the easement is located. The estimated market value is based on data collected by the Minnesota Department of Revenue in its annual spring mini abstract survey. Parts one and two are then combined to arrive at the total easement value.

Easement Procurement Process

Landowners that responded positively to the initial contact letter and expressed interest in selling an easement were contacted by project staff to schedule an onsite meeting. The meeting fulfilled multiple objectives: 1) explain details of the program and answer specific questions; 2) complete a Disclosure Statement that provides the State of Minnesota with any pertinent facts relating to the property and surrounding area; 3) review the "Landowner Bill of Rights Form" and obtain signatures of all landowners and their spouses; 4) conduct an initial site survey.

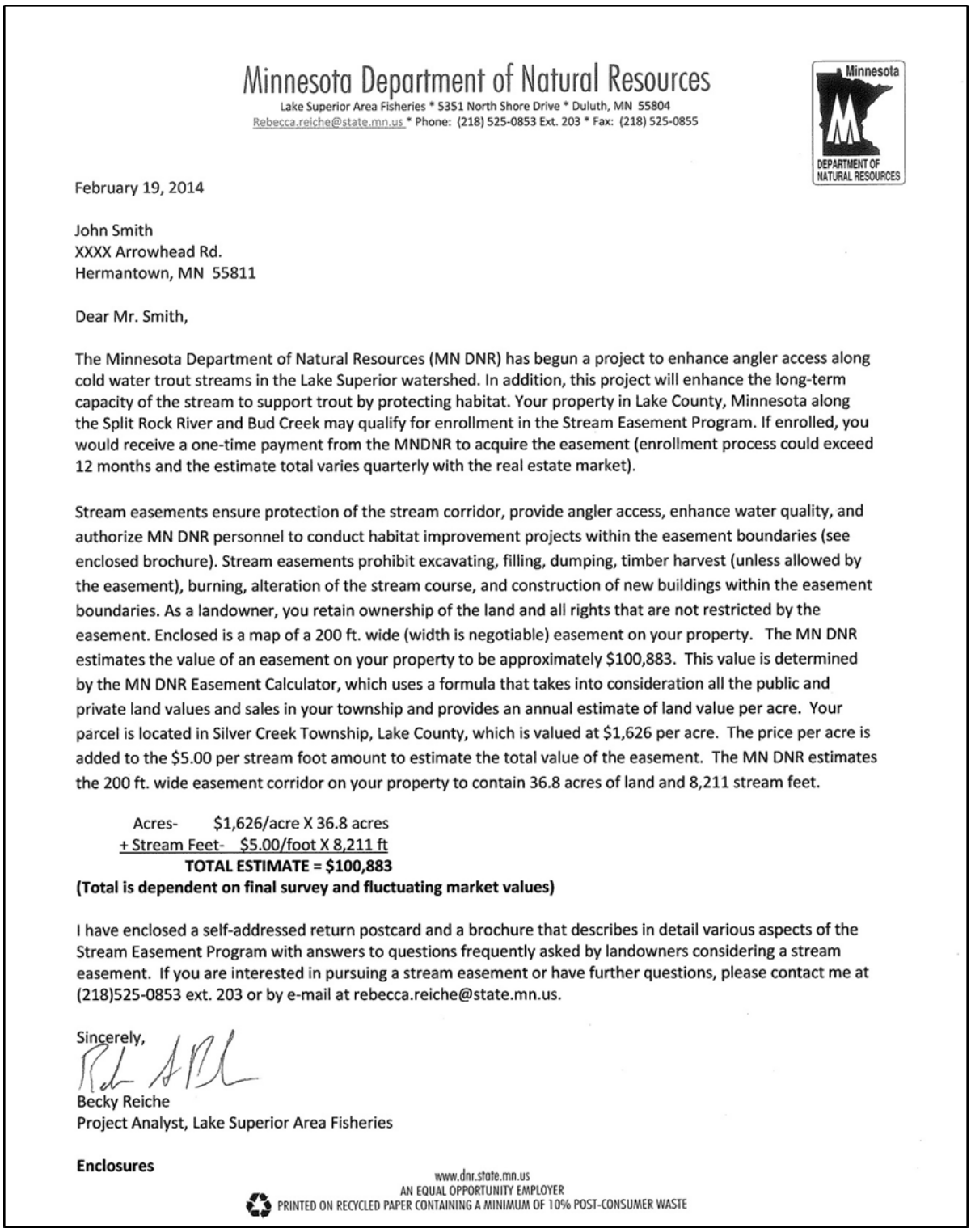
The initial site survey was conducted by project staff that walked the property, preferably with the landowner, and documented the easement area using Global Positioning System (GPS) enabled photography. Upon completion of the site survey a short summary was created, which included a photo map (map depicting the photo locations), directions to the site, trails, and other natural or man-made features on the easement. The completed site survey was reviewed by Area and project staff, and if all criteria were met, the parcel was approved and the process moved forward. Once approved internally, the landowner was contacted to verify their interest in pursuing the more formal purchasing steps.

Over the past three years, the MN DNR easement acquisition process has undergone a metamorphosis from a paper-intensive process to a digital system. In the summer of 2013 a new Land Records System (LRS) was implemented to organize and track all land transactions (i.e. fee title or easement purchases, leases, and mineral rights); and this system was designed to house all of the paperwork involved in these transactions. Easements acquired during this project were some of the first to be entered using the new system, and project staff were critical in piloting and error-checking the new process. All new and existing easements must be monitored for compliance with stated easement criteria. The Conservation Easement Monitoring System (CEMS) (Golner et al. 2014) was established to provide this function. These two new databases are now an integrated part of the MN DNR easement acquisition process and the required protocols greatly influence how the acquisition process is conducted. A detailed description and discussion on the CEMS can be found in Appendix B.

The formal easement acquisition process begins with completion of the Acquisition Fact Sheet and Acquisition Packet. The completion of these documents required the compilation and submission of the acquiring Division payment rate, initial site assessment, terms of the easement, signed landowner's bill of rights, plat book map, landowner disclosure form, a legal description of the parcel being acquired, copy of the deed, an aerial photo, initial development proposal, aquatic management area (AMA) land acquisition project proposal, photos, photomap, property surveys (optional) and landowner contact information. If required, a map of hazardous wastes and environmental concerns was also included.

Once these documents are approved by the MN DNR Regional Administrator they are assigned to a MN DNR Lands and Minerals (LAM) project manager who is in charge of shepherding the easement through the various steps that include a parcel survey, landowner negotiations, a title search, lender negotiations if required, and LAM review. At the successful completion of these stages an "Option to Purchase" is drawn up and signed by the landowner. Once signed, the county must be notified of the sale via letter and given

time to respond. When approved the easement then progresses to the Attorney General's Office where a title search occurs and the "Title Opinion" is drafted and signed. At this point the LAM project manager arranges for the "Closing Documents" to be signed by the landowner. Once signed, the encumbered funds are released for payment to the landowner and the required easement documents are recorded with the county. After completion of the final survey, normally with the landowner, the easement is posted and is available for angler use. A simplified flow chart of the entire acquisition process is shown in Figure 9. For this project the entire easement acquisition process averaged approximately one year from start to completion, with an average MN DNR administrative cost related to the transaction of approximately 20% of easement value.



Minnesota Department of Natural Resources

Lake Superior Area Fisheries * 5351 North Shore Drive * Duluth, MN 55804
Rebecca.reiche@state.mn.us * Phone: (218) 525-0853 Ext. 203 * Fax: (218) 525-0855

Minnesota
DEPARTMENT OF NATURAL RESOURCES

February 19, 2014

John Smith
XXXX Arrowhead Rd.
Hermantown, MN 55811

Dear Mr. Smith,

The Minnesota Department of Natural Resources (MN DNR) has begun a project to enhance angler access along cold water trout streams in the Lake Superior watershed. In addition, this project will enhance the long-term capacity of the stream to support trout by protecting habitat. Your property in Lake County, Minnesota along the Split Rock River and Bud Creek may qualify for enrollment in the Stream Easement Program. If enrolled, you would receive a one-time payment from the MNDNR to acquire the easement (enrollment process could exceed 12 months and the estimate total varies quarterly with the real estate market).

Stream easements ensure protection of the stream corridor, provide angler access, enhance water quality, and authorize MN DNR personnel to conduct habitat improvement projects within the easement boundaries (see enclosed brochure). Stream easements prohibit excavating, filling, dumping, timber harvest (unless allowed by the easement), burning, alteration of the stream course, and construction of new buildings within the easement boundaries. As a landowner, you retain ownership of the land and all rights that are not restricted by the easement. Enclosed is a map of a 200 ft. wide (width is negotiable) easement on your property. The MN DNR estimates the value of an easement on your property to be approximately $100,883. This value is determined by the MN DNR Easement Calculator, which uses a formula that takes into consideration all the public and private land values and sales in your township and provides an annual estimate of land value per acre. Your parcel is located in Silver Creek Township, Lake County, which is valued at $1,626 per acre. The price per acre is added to the $5.00 per stream foot amount to estimate the total value of the easement. The MN DNR estimates the 200 ft. wide easement corridor on your property to contain 36.8 acres of land and 8,211 stream feet.

Acres- $1,626/acre X 36.8 acres
+ Stream Feet- $5.00/foot X 8,211 ft
TOTAL ESTIMATE = $100,883
(Total is dependent on final survey and fluctuating market values)

I have enclosed a self-addressed return postcard and a brochure that describes in detail various aspects of the Stream Easement Program with answers to questions frequently asked by landowners considering a stream easement. If you are interested in pursuing a stream easement or have further questions, please contact me at (218)525-0853 ext. 203 or by e-mail at rebecca.reiche@state.mn.us.

Sincerely,

Becky Reiche
Project Analyst, Lake Superior Area Fisheries

Enclosures

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PRINTED ON RECYCLED PAPER CONTAINING A MINIMUM OF 10% POST-CONSUMER WASTE

FIGURE 5. Example of initial contact letter sent to landowner.

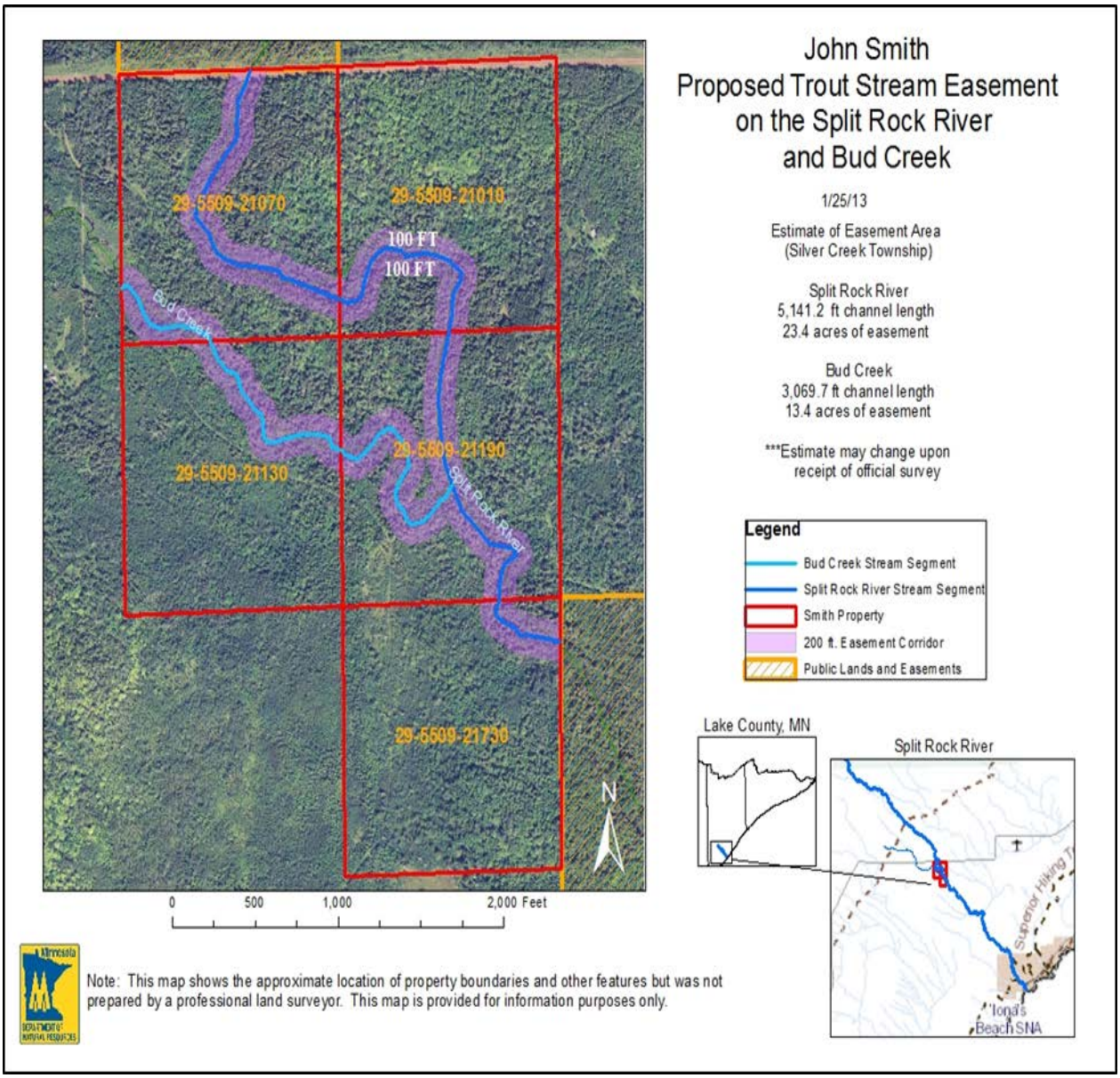


FIGURE 6. Example of easement map with measurements sent to landowner with the initial contact letter.

Is timber harvest allowed within the easement corridor?

Depending on the easement, timber harvesting may be allowed within the easement corridor, but is discouraged because overhead cover greatly benefits trout by providing shade which cools the stream. Conditions for timber harvesting are addressed in the easement. DNR Foresters can help landowners with timber harvest through the department's forestry program for private landowners.

Will the DNR provide stream habitat improvement?

The DNR may do stream habitat improvement projects on the easement, however, this is dependent upon funding availability and priority of the habitat improvement project. The DNR will work closely with landowners interested in habitat improvement (such as stream bank stabilization, tree planting, beaver removal, livestock fencing, etc.) if the stream reach warrants such work.

What is the next step in acquiring a stream easement?

If you are interested in pursuing a stream easement on your property or have additional questions about stream easements, contact Becky Reiche (contact information on back). More information regarding the enrollment process and an estimate of the payment you would receive for your easement can be provided upon request.

For additional information contact:

Becky Reiche
Project Analyst
Lake Superior Area Fisheries
5351 North Shore Dr.
Duluth, MN 55804

Phone: 218-525-0853 ext. 214
Fax: 218-525-0855
E-mail: rebecca.reiche@state.mn.us

Lake Superior Watershed Stream Easements

Answers to frequently asked questions

Minnesota DEPARTMENT OF NATURAL RESOURCES

Landowners who have a stream on their property can help protect Minnesota's coldwater habitat and receive a cash payment by granting a stream easement.

In cooperation with willing landowners, the Minnesota Department of Natural Resources (DNR) has established hundreds of miles of fishing easements along Minnesota's streams. Money for purchasing stream easements comes from a variety of funding sources including the sale of trout stamps, the Environment and Natural Resources Trust Fund (state lottery), Lessard-Sams Outdoor Heritage funds, and State Bonding.

Easement corridors encompass a strip of land on one or both sides of the centerline of the stream. The size is typically based on the width of the stream though in certain circumstances the size and shape of the easement is negotiable. Easements permit angler access, provide corridor protection, and allow the DNR to conduct habitat improvement activities if needed. Landowners retain ownership of the land and all rights not restricted by the easement.

The following questions and answers will help land owners determine if a stream easement is right for them.

How does an easement work?

An easement is a permanent legal contract with the DNR. In return for payment, the landowner must allow public fishing and DNR management activities along the stream corridor on their property. Landowners are not required to allow access for activities such as hunting, trapping, camping, or hiking, only fishing. Easements put an encumbrance on the title that stays on the land even if it is sold or deeded to an heir.

How does the DNR determine the value of an easement?

Payments for easements are determined under Minnesota Statute 84.0272. The value of an easement is a two part calculation. The first part is calculated by multiplying the linear feet of stream owned by $5. The second part is based on the total area in acres encompassed by the easement multiplied by the land's current estimated market value in your township.

How do anglers know about the location and boundaries of the easement?

The DNR marks the easement access points with yellow 18×12 inch signs, that list activities NOT permitted on the easement. Boundaries of the easement are marked with 5×7 inch, tan colored signs, which ask anglers to respect the landowner's rights and not to trespass outside of the easement boundary.

Will my property be damaged?

Most landowners who grant a stream easement report no damage. Landowners retain the right to have anyone acting unlawfully removed from their property. If necessary, you can request help from local law enforcement, including your local DNR conservation officer.

Is the landowner responsible if an angler injures themselves or others in the easement corridor?

When there is no charge for public use of the land, landowners are not responsible for making property safe and are not liable for damages resulting from injury or death. However, landowners who engage in activities that involve a substantial risk of death or serious bodily harm to others may be held liable.

FIGURE 7. Brochure describing conservation easements that was sent to landowners.

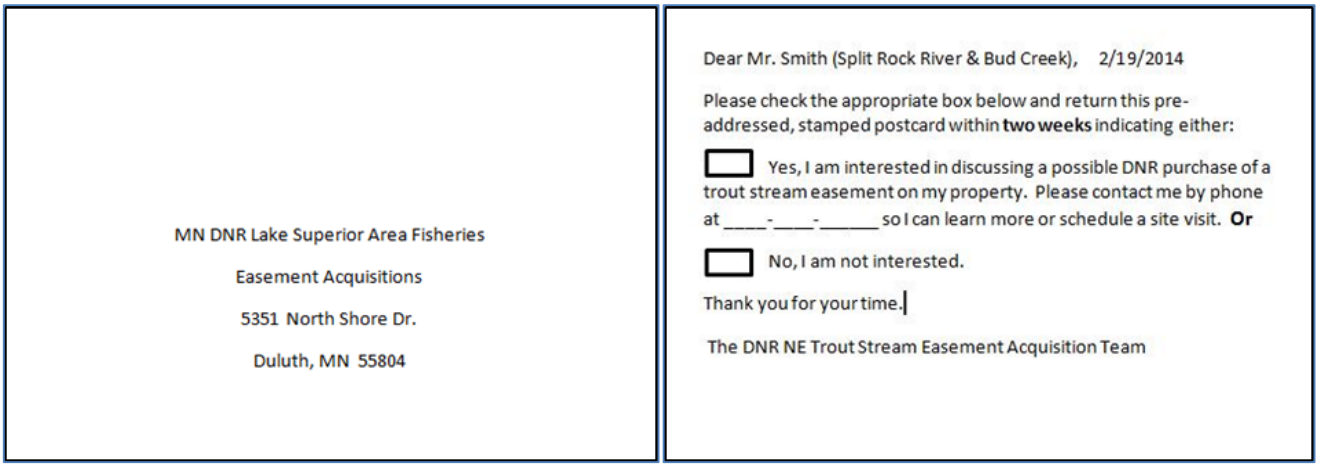


FIGURE 8. Example of response postcard sent to landowners with the initial contact letter.

Easement Data Collection, Preparation, Monitoring and Storage

All potential easement parcels were surveyed using both a variety of electronic information sources and direct on-the-ground surveys in the field. Before any field surveys were conducted an aerial reconnaissance survey using in-house and generally available electronic information was reviewed for each parcel. This included aerial photos from the MN DNR ArcMap Quick Layer-Farm Service Administration 2010 Color Aerial Photography, Google Earth and Bing Maps Bird's Eye. Each source provided a slightly different spatial and temporal perspective. Bing Maps Bird's Eye, where available, had the highest image resolution of the three and was also the most recent. Unlike most aerial imagery which is derived by satellite, Bird's Eye images are taken at a 45° angle by light aircraft flying several thousand feet above the ground.

Once on site, project staff walked the proposed easement area and followed the centerline of the stream as closely as possible. If aerial images indicated a need for closer inspection, the location was examined carefully during the site or monitoring visit. This process was used during both the initial site visit for new easements and during inspections of existing easements for potential violations. Data collected during baseline field surveys included four types of electronic data; digital geo-referenced photos, GPS tracks, GPS waypoints, and field notes. All photos and GPS waypoints were collected using a Garmin Montana 650t GPS/camera. After field inspections were completed, photo maps were created to organize and document all data collected. Details on what data were collected, how they were collected, why they were collected and how they were loaded into the CEMS are covered in Appendix B.

All the steps in the easement acquisition process are recorded and progress to completion can be tracked through the new LRS. On newly acquired easements, once the initial survey and easement baseline field work was completed, data were prepared and entered into CEMS. On existing easements, baseline information was collected in a similar manner and entered into the CEMS. The baseline information on both new and existing easements can then be compared to future assessments, and the database can be updated as required.

Conservation easement monitoring is essential to ensure that the landowner and the general public are complying with the easement's terms. Ultimately, monitoring ensures that the conservation values of the easement site continue to be protected. A goal of the MN DNR is to monitor all of its conservation easements on a regular basis. The specific monitoring schedule will depend on the easement type and staffing availability, but will typically include an on-the-ground visit to the easement site every 3-5 years. Documentation of observed conditions and a description of suspected easement term violations (including photographs) will be collected as part of a monitoring visit report and will be entered into the CEMS.

FIGURE 9. Flowchart of MN DNR easement acquisition process.

RESULTS

Atlas of Easements in Lake Superior Watershed – North Shore Streams

The primary objective of this project was to create an atlas depicting easements in the riparian zone of North Shore streams in the Lake Superior watershed. The atlas was created and it depicts both private and public land ownership in the riparian zone within each watershed. In addition, the atlas identifies high priority sites for targeted acquisition. The primary atlas was created for 31 separate watersheds of streams tributary to Lake Superior (Appendix C). Each watershed was mapped using shape files and includes detailed information on prioritized private parcels, public lands, and new easements. In addition, a more general atlas was created to depict priority 1 easement activity that occurred as a result of this project, and future high priority stream segments were identified within the 31 North Shore watersheds (Appendix D).

The GIS layers used to build the atlas can be accessed by the three fisheries management Areas in which the streams are located by opening the *.PKT files in Arc Catalog™ (ArcMap 10.0 or newer needed to view files). Once the project is loaded onto their systems MN DNR Quick Layers "Parcels in Minnesota (Figure 2)" and "State AMA Acquisitions - Fisheries (Sub 40) (Figure 3)" layers are required to ensure accuracy by verifying landowner information and updating parcel lines.

In addition to the two electronic atlases included in this report, a digital file containing all finalized easement documents, baseline reports and a report on the status of any easements that are currently in process will be provided to the respective Areas.

Summary of New Easements Acquired

Once potential easements had been mapped and prioritized, landowners were contacted by letter to determine interest in the program. A total of 178 land owners were contacted and 48 expressed interest in a follow-up conversation. Of those expressing interest, 22 easements have been acquired, 10 are in the final stages of being acquired, 8 are tabled due to lack of funding and 7 declined to move forward for various reasons (Table 1). Given these figures the percent of overall interests was 22.5% when acquired easements, easements in progress and interest but no funding are all included. Considering the easements acquired and those in progress, the success rate is 18%, almost double the 10% anticipated before the project started.

Easements acquired or in progress total 11.4 miles of stream length and 208 acres of riparian habitat. In addition, a total of 22 new angler access points were added. The land costs for these easements totaled approximately $785,000 (Table 2). An important objective of this project was to increase connectivity of existing easements. Through strategic acquisition, connectivity was increased to 95 miles of stream, a nearly 10-fold increase over the actual miles of easements purchased (Table 2). All new easements were assessed, baseline conditions were recorded, potential habitat management strategies were outlined where appropriate, and all data was entered into the CEMS software (Table 3).

Assessment of Existing Easements

A secondary objective of this project was to assess and monitor existing easements and develop potential management plans where appropriate. Over the course of this project, field inspections occurred on 12 existing easements (Table 4). In a related development, the State of Minnesota, through a legislative audit, required that all Aquatic Management Areas (AMAs), which include conservation easements, must be inspected over a three-year period. This paralleled the stated objective for this project, and a software program, CEMS, described earlier in the methods (Appendix B) was developed and implemented by the state. Project staff worked closely with the software developer to input our assessment data into the new program. In addition, because the GLBFHP funded riparian project was moving rapidly forward, and partially fulfilling the desired outcomes of the legislative audit, additional state funding was allocated to hire a seasonal employee to monitor existing easements. With the assistance of Area staff they assessed and entered baseline survey information into the CEMS for 196 existing easements in the Lake Superior Watershed. Without the implementation of the GLBFHP riparian project, the additional funding may not have been allocated, or may have been allocated to a different location in the state.

TABLE 1. Summary of easement acquisition activities with landowners.

Area	(A) Streams Prioritized	(B) Streams With Acquisitions	(C) Number of Landowners Contacted	(D) Number of Landowners Interested	(E) Total Easements Initially Pursued	(F) Landowner Interest But No Funding	(G) Easements Canceled	(H) Easements Acquired	(I) Easements In Process	% Overall Success ((F+H+I)/C)	% Acquisition Success ((H+I)/C)
Duluth	8	5	101	24	26	3	5	14	4	20.8	17.8
Finland	7	4	36	9	10	5	0	0	4	25.0	11.1
Grand Marais	15	7	41	11	12	0	2	8	2	24.4	24.4
Totals	**30**	**16**	**178**	**44**	**48**	**8**	**7**	**22**	**10**	**22.5**	**18.0**

TABLE 2. Summary of stream mileage, riparian acres and costs for newly acquired easements resulting from this project.

Area	Easements Added	Stream Miles Added	Easement Acres Added	Miles of Easement Connected	Number of Parcels Encumbered by Easements	Angler Access Points Added	Cost
Duluth	18	4.5	84.6	22.0	25	11	$219,753.93
Finland	4	2.9	52.1	28.9	11	4	$152,900.71
Grand Marais	10	4.1	71.2	44.2	18	7	$412,170.18
Totals	**32**	**11.4**	**208.0**	**95.1**	**54**	**22**	**$784,824.82**

TABLE 3. Summary of new easement baseline monitoring.

DULUTH AREA

Stream Name	Easement Name	Date Visited	Stream Miles Monitored	Acres Monitored	Photo Points Recorded	Management Plans Completed	Baseline Reports Completed
French River	French River AMA- 12 "149410"						
French River	French River AMA- 1 "147660"	8/12/2013	0.25	5.19	25	1	1
French River	French River AMA- 8 9 "148590"	10/2/2013	0.36	6.97	134	1	1
French River	French River AMA- 2 "147950"	7/29/2013	0.08	1.32	17	1	1
French River	French River AMA- 3 "148820"						
Knife River	Knife River AMA- 40 "147700"	9/24/2013	0.30	7.20	45	1	1
L. W. Br. Knife River	Easement Name Not Yet Assigned- "147920"						
W.Br. Knife/Knife River	Knife River AMA- 41 "147910"	8/5/2013	0.31	4.13	27	1	1
W. Br. Knife River	Knife River West Branch AMA- 14 "148160	7/24/2013	0.26	5.80	25	1	1
W. Br. Knife River	Knife River West Branch AMA- 11 "147670	7/12/2013	0.23	2.95	13	1	1
W. Br. Knife River	Knife River West Branch AMA- 13 "147710"	8/16/2013	0.37	8.00	41	1	1
W. Br. Knife River	Knife River West Branch AMA- 12 "147690"	10/1/2013	0.21	4.37	20	1	1
Stewart River	Easement Name Not Yet Assigned- "150270"	5/8/2013	0.21	4.40	13		
Stewart River	Stewart River AMA- 10 "148630"	9/13/2013	0.12	3.06	6	1	1
Stewart River	Easement Name Not Yet Assigned- "149900"	5/10/2013	0.13	1.20	15		
Stewart River	Stewart River AMA- 7 "148640"	9/13/2013	0.15	1.79	11	1	1
Stream Totals			**2.98**	**56.38**	**392**	**11**	**11**

TABLE 3 continued on next page.

TABLE 3. Continued.

FINLAND AREA

Stream Name	Acquisition Number	Date Visited	Stream Miles Monitored	Acres Monitored	Photo Points Recorded	Management Plans Completed	Baseline Reports Completed
Baptism River	Easement Name Not Yet Assigned- "160060"	7-16-2013	0.91	11.0	34		
Beaver River	Easement Name Not Yet Assigned- "160097"	9-19-2013	0.38	4.6	16		
Bud Creek	Easement Name Not Yet Assigned- "150290"		0.58	13.4			
Split Rock River	Easement Name Not Yet Assigned- "150300"		0.97	23.1			
Stream Totals			**2.84**	**52.1**	**50**	**0**	**0**

GRAND MARAIS AREA

Stream Name	Easement Name	Date Visited	Stream Miles Monitored	Acres Monitored	Photo Points Recorded	Management Plans Completed	Baseline Reports Completed
Cascade River	Cascade River AMA- 15 "149220	11/7/2013	0.22	8.00	13	1	1
Devil Track River	Devil Track River AMA- 6 "149230"	10/25/2013	0.17	2.10	10	1	1
Devil Track R./Elbow Cr.	Devil Track River AMA- 4 "148840"	11/8/2013	0.16	2.50	13	1	1
Devil Track R./Woods Cr.	Devil Track River AMA- 15 "149000	11/8/2018	0.49	6.50	18	1	1
Kimball Creek	Kimball Creek AMA- 4, 7 & 8 "149280"	9/19/2012	0.41	6.90	22	1	1
Kimball Creek	Kimball Creek AMA- 6 "149310"	9/19/2012	0.26	5.80	19	1	1
Kimball Creek	Kimball Creek AMA- 5 "149560"	9/19/2012	0.20	2.30	12	1	1
Mistletoe Creek	Mistletoe Creek AMA- 1 "149320"	11/6/2013	1.46	27.20	91	1	1
Tait River	Tait River AMA- 1 "149330"	11/7/2013	0.31	6.33	16	1	1
Stream Totals			**3.68**	**67.63**	**214**	**9**	**9**
PROJECT TOTALS			**9.50**	**176.11**	**656**	**20**	**20**

TABLE 4. Summary of existing easement baseline monitoring.

FINLAND AREA

Stream Name	Easement Name	Date Visited	Stream Miles Monitored	Acres Monitored	Photo Points Recorded	Management Plans Completed	Baseline Reports Completed
Cedar Creek	Cedar Creek AMA- 1 Consolidated Paper	10/11/2013	0.3577	5.1	31	1	1
Heartbreak Creek	Heartbreak Creek AMA- 2 Consolidated Paper	10/14/2013	0.8831	12.5	72	1	1
Fourmile Creek	Cross River AMA- 2 Consolidated Paper	10/16/2013	0.4056	6.2	22	1	1
Un-named Tributary	Cross River AMA- 1 Consolidated Paper	10/16/2013	0.5182	8.5	86	1	1
Sawmill Creek	Baptism River AMA- 4 Env. Learning Center	10/17/2013 & 10/22/2013	1.0183	10.1	104	1	1
Un-named Tributary	Baptism River AMA- ? Env. Learning Center	10/17/2013	0.0963		10		
Section 15 Creek	Section 15 Creek AMA- Allete Inc.	10/22/2013	0.3160	14.1	30	1	2
Two lsland River	Two Island River AMA- Allete Inc.	10/22/2013	0.6422	28.6	41	1	2
Stream Totals			**4.2374**	**85.1**	**396**	**7**	**9**

GRAND MARAIS AREA

Stream Name	Easement Name	Date Visited	Stream Miles Monitored	Acres Monitored	Photo Points Recorded	Management Plans Completed	Baseline Reports Completed
Poplar River and Tribs	Poplar River AMA- 1 Lucie Detrick	10/23/2013	2.7531	43.4	135	1	1
Kadunce Creek	Kadunce Creek AMA- 3 Paul Fleming	10/24/2013	0.7241	11.2	53	1	1
Caribou Creek	Poplar River AMA- 2 Mark Kilen	10/24/2013	0.2241	3.6	18	1	1
Stream Totals			**3.7013**	**58.2**	**206**	**3**	**3**
PROJECT TOTALS			**7.9387**	**143.3**	**602**	**10**	**12**

Habitat Improvement Considerations for New Easements

One objective of the project was to develop habitat improvement recommendations, where appropriate, on all new easements acquired. Effective habitat management and protection of trout stream easements not only benefit aquatic species, but all species associated with these biologically rich ecosystems. All trout stream conservation easements held by MN DNR include terms that allow habitat improvement projects to be conducted within the easement corridor.

Of the 32 newly acquired easements, stream or riparian habit improvement was recommended for 25 of them (Table 5). This included 20 easements with established populations of invasive terrestrial plant species, 12 in need of tree planting, nine with eroding banks, six with structures or debris needing removal (e.g. culverts, bridge support beams, remains of lumber mills, etc.) and two with barriers to upstream fish movement (i.e. beaver dams).

Of the five general types of habitat improvement listed above, invasive plant species were the most frequent management issue. Currently, the State of Minnesota lists 37 species of terrestrial plants as "invasive" and management is recommended to prevent continued spread (MN DNR 2003). Eleven of the 37 listed invasive species were observed within easement corridors. Reed canary grass was by far the most prevalent of the invasive plants observed. In many cases, invasives were commonly found at or downstream of highway crossings. This is likely due to the abundance of "weed" seeds in the seed mixes used by highway departments and the mulch used as ground cover on newly seeded soil.

Tree planting was recommended on 12 sites, and in each case was directly related to the successional removal/replacement of invasive species. Species such as northern white cedar, tamarack and black spruce do well in poorly drained soils and are also avoided by beaver, making them ideal candidates for planting. If carefully managed, these areas will fill in with trees and reed canary grass will ultimately be shaded out. Fencing newly planted trees up to six feet high is an essential means of reducing losses from winter browsing whitetail deer and snowshoe hare.

Various parts of old structures and equipment were found on five easements. Some of the largest pieces included remains of a timber mill operation, and a corrugated steel culvert on the Devil Track River (Figure 10). A lattice support beam from a snowmobile/hiking trail bridge and several large sheets of galvanized metal siding were found on the Beaver River.

Habitat Improvement Considerations for Existing Easements

Habitat improvement plans were developed, when appropriate, for existing conservation easements when initial baseline surveys were completed. Seven sites were located in Finland Area and three in Grand Marais Area (Table 6). Of the easements located in Finland Area, three had violations of easement terms. One violation was an extensive bridge and boardwalk system constructed across Sawmill Creek. Supporting abutments from the same footbridge system were also found downstream, apparently washed out after recent flooding. In addition, Sawmill Creek has a long history of beaver colonization and three dams were found that present barriers to fish migration. Periodic flooding and draining from dams have led to the establishment of dense stands of reed canary grass. The habitat improvement plan for this easement recommends removal of all bridge-related structures along with long-term removal of beaver and beaver dams combined with tree planting within the entire easement corridor.

Tree planting was also recommended for Section 15 Creek and an un-named tributary to Cross River. Both easements had violations of easement terms. On Section 15 Creek, a neighboring property owner established a network of off-road vehicle trails within the easement corridor requiring restoration of approximately 0.3 acres. Trail use and/or the power line crossing were the likely source of two small populations of invasive species: Canada thistle and common tansy.

On an un-named tributary to Cross River, logging cleared approximately 1.0 acre of previously forested land within the easement corridor. Marketable trees including northern white cedar, tamarack and black spruce were felled and removed, while others were felled and left. It is recommended that these same species be replanted. Finland Area staff will work closely with the landowner to address all of the above issues found during the baseline surveys.

Of the three easements in Grand Marais Area, habitat improvement was recommended only on Kadunce Creek. A floating bridge spanning the entire easement width was in violation of easement terms and requires removal. Kadunce Creek also has a long history of beaver colonization, and several dams appear to limit upstream fish migration. Removal of beaver dams and long term management of beaver are recommended in order to re-establish conifers in the riparian corridor.

TABLE 5. Summary of habitat improvement recommendations - new easements.

Area	River or Creek	Acquisition Number	Invasive Species	Bank Stabilization	Tree Planting	Structure/Debris Removal	Fish Migration Barrier
Duluth	French	149410	RG		2 sites		
Duluth	French	147660	RG	5 sites		2 log jams	
Duluth	French	148590	RG, FS, SK, WC	1 site	2 sites		1 beaver dam
Duluth	French	147950	RG, CB			1 site (misc. concrete)	1 log cross vane
Duluth	French	148820	RG		1 site		
Duluth	Knife	147700			1 site		
Duluth	L. W. Br. Knife	147920	RG		2 sites		
Duluth	L. W. Br. Knife	149440	RG		2 sites		
Duluth	Stewart	150270	RG	2 sites (major)			
Duluth	Stewart	148630					
Duluth	Stewart	150280		1 site	1 site		
Duluth	Stewart	149900	RG	1 site (major)			
Duluth	Stewart	148640					
Duluth	W. Br. Knife/Knife	147910	RG, CB, CT, WC, CA	1 site	2 sites		
Duluth	W. Br. Knife	148160	RG		1 site	1 site (cable crossing)	
Duluth	W. Br. Knife	147670	RG, CT, WC, CA				
Duluth	W. Br. Knife	147710	RG, TH, CT, CA				
Duluth	W. Br. Knife	147690	RG	1 site			
Duluth Totals	**5**	**18**	**14**	**7**	**9**	**3**	**2**

Area	River or Creek	Acquisition Number	Invasive Species	Bank Stabilization	Tree Planting	Structure/Debris Removal	Fish Migration Barrier
Finland	Baptism	160060	RG, OD, OH, BF	1 site	1 site		
Finland	Beaver	160097				2 sites (steel bridge beam, sheet metal)	
Finland	Bud	150290	RG		1 site		
Finland	Split Rock	150300	RG		1 site		
Finland Totals	**4**	**4**	**3**	**1**	**3**	**1**	

TABLE 5 continued on next page.

TABLE 5. Continued.

Area	River or Creek	Acquisition Number	Invasive Species	Bank Stabilization	Tree Planting	Structure/Debris Removal	Fish Migration Barrier
Grand Marais	Cacade	149220					
Grand Marais	Devil Track	149230					
Grand Marais	Devil Track/Elbow	148840				1 site (culvert)	
Grand Marais	Devil Track	149610	RG				
Grand Marais	Devil Track/Woods	149000	RG			2 sites (wood mill equipment, culvert)	
Grand Marais	Kimball	149280					
Grand Marais	Kimball	149310					
Grand Marais	Kimball	149560					
Grand Marais	Mistletoe	149320	RG	1 site			
Grand Marais	Tait	149330					
Grand Marais Totals	**7**	**10**	**3**	**1**		**2**	
Project Totals	**16**	**32**	**20**	**9**	**12**		**2**

Key to invasive species: BF = birdsfoot trefoil, BT = bull thistle, CB = common buckthorn, CT = Canada thistle, FS = false spirea, OD = oxeye daisy, OH = orange hawkweed, RG = reed canary grass, SK = spotted knapweed, TA = common tansy, TH = tatarian honeysuckle, WC = white sweet clover

FIGURE 10. Examples of debris that will be removed from easement corridor on the Devils Track River.

TABLE 6. Summary of habitat improvement recommendations- existing easements.

Area	River or Creek	Easement Familiar Name	Invasive Species	Bank Stabilization	Tree Planting	Structure/Debris Removal	Fish Migration Barrier
Finland	Sawmill	Baptism River AMA- 4	RG		1 site	1 bridge	3 beaver dams
Finland	Un-named	Cross River AMA- 1			1 restoration		
Finland	Section 15	Section 15 Creek AMA	CT, TA		1 restoration		
Finland	Fourmile	Cross River AMA- 2					
Finland	Two Island	Two Island River AMA		4 sites			
Finland	Heartbreak	Heartbreak Creek AMA- 2					6 beaver dams
Finland	Cedar	Cedar Creek AMA- 1	RG		1 site		1 beaver dam
Finland Totals	**7**	**7**	**3**	**1**	**4**	**1**	**3**

Area	River or Creek	Easement Familiar Name	Invasive Species	Bank Stabilization	Tree Planting	Structure/Debris Removal	Fish Migration Barrier
Grand Marais	Poplar	Poplar River AMA- 1					
Grand Marais	Caribou	Poplar River AMA- 2					
Grand Marais	Kadunce	Kadunce River AMA- 3	RG	1 site	1 site	1 bridge	2 beaver dams
Grand Marais Totals	**3**	**3**	**1**	**1**	**1**	**1**	**1**
Project Totals	**10**	**10**	**4**	**2**	**5**	**2**	**4**

Key to invasive species: BF = birdsfoot trefoil, BT = bull thistle, CB = common buckthorn, CT = Canada thistle, FS = false spirea, OD = oxeye daisy, OH = orange hawkweed, RG = reed canary grass, SK = spotted knapweed, TA = common tansy, TH = tatarian honeysuckle, WC = white sweet clover

Collaboration with Other Organizations

To address the collaborative partnership objective of the riparian project, MN DNR staff worked with local units of government, conservation organizations and fishing groups to begin implementation of habitat improvement projects in the Lake Superior watershed.

Lake County SWCD

As a result of successful acquisitions on Stewart River, Lake County Soil and Water Conservation District (SWCD) was able to move forward with proposed grant funding from the LSOHC to repair stretches of the Stewart River on easements 150270 and 149900 (Figure 11). These two areas were particularly hard hit during the extreme flooding event of June 2012. Undersized culverts used for the Big Rock Road crossing became plugged with debris after 10" of rain fell in less than 24 hours. This stretch of river is marked by deep natural gravel deposits which became unstable as the Stewart River rose. When the top of the road was breached, the approach to the north culvert was cut down by the river and two 30' high banks collapsed upstream. Landowners on both sides of the river lost considerable high ground as a result.

Lake County SWCD and MN DNR Division of Ecological and Water Resources has targeted this area for bank stabilization and sediment reduction. However, LSOHC funding can only be used on projects that occur on public land or private land with public easements. Since conservation easements were acquired as a result of this project, site restoration can now move forward using LSOHC funding. Lake County SWCD also intends to use the purchase price of both easements as match for a Sustain Our Great Lakes grant. MN DNR Division of Ecological and Water Resources also have plans to use both sites as lab practicum for upcoming Rosgen stream restoration training. Rosgen students will design the restoration, reducing some engineering costs and provide valuable in-kind cost reduction which will also be used as match for the restoration project.

MN DNR project staff have provided Lake County SWCD with existing easement shapefiles for potential LSOHC funded projects on surveyed sections of the Knife River. If successful, LSOHC and other funds will be used to stabilize eroding clay banks and reduce sediment-laden runoff into the Knife River.

Minnesota Trout Unlimited

Project staff assisted the new Stewart River Watershed Coordinator with the Minnesota Chapter of Trout Unlimited (MNTU) in an effort to map and prioritize potential habitat improvement projects within the Stewart River watershed. Several sites were suggested including tree planting along the Little Stewart River to replace dense mats of reed canary grass. This stretch of river has a history of pre-settlement clear cutting and subsequent agricultural use. Beaver activity is also extensive in this area. The goal of MNTU in the Stewart River Watershed is to implement long-term habitat improvement projects that include tree planting, bank stabilization and reconnecting the main stream channel (Figure 12). MNTU also plans to coordinate with environmentally minded youth in the area to assist with tree planting and eradicate invasive plant species. If successful, sites on other new easement acquisitions may be targeted for similar activities.

Outreach

An important component of this project was outreach to the general public, anglers and agency staff. Updates were given at three statewide Area Fisheries Managers conferences. The high interest and timely objectives of this project led to the initiation of a similar initiative in South-East Minnesota ("the Drift-less Area") where there are many very productive trout streams. A number of articles on this project were published in local newspapers, various websites, press releases and internal agency documents. Six progress reports were produced and shared among the NE Region fishery managers, USFWS staff and a number of interested citizens.

Project staff recently created a poster summarizing easement acquisition activity across the entire Minnesota portion of the Lake Superior watershed (Figure 13). A portfolio containing maps of individual watersheds similar to Appendix D was also produced and included as a companion to the poster. The poster was presented at several venues including the Great Waters Fly Fishing Expo, National Sports Center, Blaine, Minnesota Feb. 21-23, 2014; a statewide MN DNR Fisheries Conference and Training Session Feb. 26 and 27th, 2014 at Camp Ripley, Minnesota; and at the Twin Ports Freshwater Folk poster social and potluck, May 7th, 2014. The poster was also used by the Minnesota Steelhead Association at one of their "meet and greet" functions.

Project staff gave power point presentations to various user groups that included the Arrowhead Fly Fishers, Minnesota Trout Unlimited, the Izaak Walton League, the Lake Superior Cold Water Coalition, the Advocates for the Knife River Watershed, and a number of meetings with LUGs. Unlike many natural resource projects, almost everyone that learned of this project was supportive, and encouraged continuation of easement acquisition.

Baseline easement monitoring training using the new CEMS was provided to Duluth, Finland and Grand Marais Area Fisheries staff during October 2013. Field training was conducted for Finland and Grand Marais Area staff over a period of seven days in fall 2013 and baseline conditions were documented on all existing conservation easements in both Areas. Training included the use of ArcMap and MN DNR Garmin software to identify conservation easements and load shapefiles into GPS units. Proper field techniques and personal safety were also discussed. Once all easement monitoring photos and field notes were uploaded into the CEMS, follow-up training on the use of the CEMS software program was provided. All documents and files associated with each easement including photos, easement documents, GPS shapefiles and notes were transferred to the inland Areas at this time.

FIGURE 11. Proposed stream restoration area by Lake County SWCD on newly acquired Stewart River easement.

Spring 2014

Stewart River Watershed Project

The River Keeper

MINNESOTA TROUT UNLIMITED

What's Inside:

Upcoming Events

Stewart River Watershed Project Open House, 5-7 p.m. Tuesday, May 20, Two Harbors Curling Club. Yes, the steelhead will be running but come meet fellow watershed landowners, enjoy some smoked Alaska salmon and a beverage and hear about the project.

Little Stewart River Tree Planting Project, 9 a.m.-1 p.m. Saturday, May 31. Meet at the Ted Dallos property, 1767 Waldo Road, Two Harbors. Call Forrest Johnson for details, 218-830-0166.

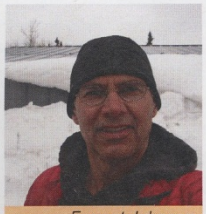
Sucker River Habitat Project tour Namebini open house, Saturday, May 31. Call Carl Haensel for details and location, 218-525-2381.

Don't Forget

We will have a variety of trees available for watershed landowners. Call Forrest at 218-830-0166 for details or fill out the form on the last page of the newsletter to get in your order.

Calling all Watershed Landowners and Friends

by Forrest Johnson

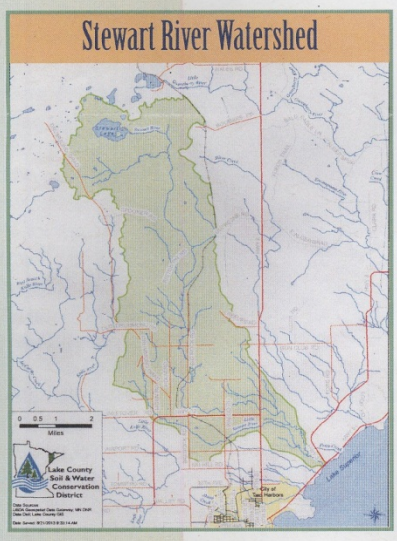


Forrest Johnson Coordinator

Hello to the landowners and many friends of the Stewart River watershed.

Spring, yes spring, is finally upon us. The 130-plus inches of snow and below zero temps will disappear and the time for tree planting and tending gardens is just around the corner.

Since last fall I've been able to visit with many of you about our Stewart River Watershed Project and get your support and participation in this unique conservation effort within the 32.1 square mile basin.



Minnesota Trout Unlimited received funding from several sources aimed at involving as many landowners in helping care for the resources on both public and private lands. Minnesota Trout Unlimited is involved because of the coldwater fisheries found in the system and its belief that a healthy watershed for trout and steelhead depends on you, the landowners. It is about the watershed, and each of us.

There is an ambitious plan to directly improve in-stream and riparian habitat along more than 2,000 feet of stream and restore trees to more than a mile of riparian corridor that currently lacks forest canopy cover.

That's where all of you can get involved.

Landowners can have a positive impact on watershed health through sound conservation practices on your own lands. The Stewart River project will help you plan and carry out projects such as tree plantings, the removal of invasive vegetation, bank stabilization and in-stream habitat work. Increasing your understanding of how land usage can impact the water resource is an essential part of increasing the overall conservation capacity of the area.

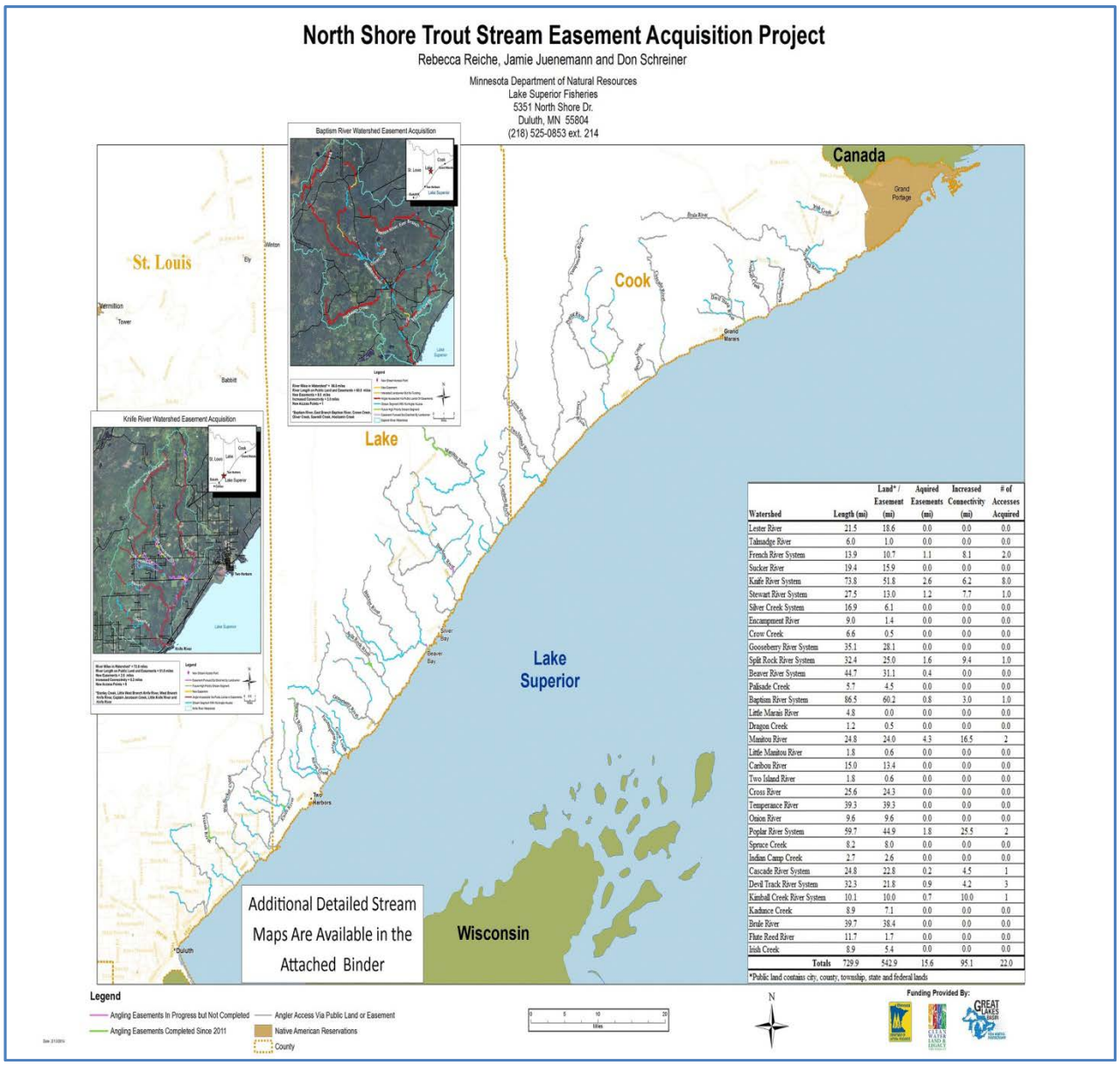
As landowners you also share ownership in the thousands of acres of public lands within the basin and can help direct land management decisions that affect the health of the river. We all have that voice for a shared resource and when that voice is backed by knowledge of the resource and sound habitat work, that's when our words and actions become an effective conservation tool.

Over the next several seasons I plan to gather and share as much information about the watershed as I can through public gatherings, site visits and through this newsletter I'm calling the *River Keeper*. I've been tramping around the river and watershed for over 40 years but a lot of you folks know more about your part of the river than I do. I'm all ears to your input. Everybody will have the chance to get involved.

I really feel we can have a positive impact on the health of the Stewart River watershed.

1

FIGURE 12. Newsletter from Minnesota Trout Unlimited Stewart River Watershed Project. Most planned habitat improvement projects will take place on conservation easements.



Watershed	Length (mi)	Land*/ Easement (mi)	Aquired Easements (mi)	Increased Connectivity (mi)	# of Accesses Acquired
Lester River	21.5	18.6	0.0	0.0	0.0
Talmadge River	6.0	1.0	0.0	0.0	0.0
French River System	13.9	10.7	1.1	8.1	2.0
Sucker River	19.4	15.9	0.0	0.0	0.0
Knife River System	73.8	51.8	2.6	6.2	8.0
Stewart River System	27.5	13.0	1.2	7.7	1.0
Silver Creek System	16.9	6.1	0.0	0.0	0.0
Encampment River	9.0	1.4	0.0	0.0	0.0
Crow Creek	6.6	0.5	0.0	0.0	0.0
Gooseberry River System	35.1	28.1	0.0	0.0	0.0
Split Rock River System	32.4	25.0	1.6	9.4	1.0
Beaver River System	44.7	31.1	0.4	0.0	0.0
Palisade Creek	5.7	4.5	0.0	0.0	0.0
Baptism River System	86.5	60.2	0.8	3.0	1.0
Little Marais River	4.8	0.0	0.0	0.0	0.0
Dragon Creek	1.2	0.5	0.0	0.0	0.0
Manitou River	24.8	24.0	4.3	16.5	2
Little Manitou River	1.8	0.6	0.0	0.0	0.0
Caribou River	15.0	13.4	0.0	0.0	0.0
Two Island River	1.8	0.6	0.0	0.0	0.0
Cross River	25.6	24.3	0.0	0.0	0.0
Temperance River	39.3	39.3	0.0	0.0	0.0
Onion River	9.6	9.6	0.0	0.0	0.0
Poplar River System	59.7	44.9	1.8	25.5	2
Spruce Creek	8.2	8.0	0.0	0.0	0.0
Indian Camp Creek	2.7	2.6	0.0	0.0	0.0
Cascade River System	24.8	22.8	0.2	4.5	1
Devil Track River System	32.3	21.8	0.9	4.2	3
Kimball Creek River System	10.1	10.0	0.7	10.0	1
Kadunce Creek	8.9	7.1	0.0	0.0	0.0
Brule River	39.7	38.4	0.0	0.0	0.0
Flute Reed River	11.7	1.7	0.0	0.0	0.0
Irish Creek	8.9	5.4	0.0	0.0	0.0
Totals	729.9	542.9	15.6	95.1	22.0

*Public land contains city, county, township, state and federal lands

FIGURE 13. Poster summarizing riparian easement acquisition project used for display at public and scientific events.

DISCUSSION

All objectives put forth in the project proposal were met or surpassed during the duration of this project. As described above, strategic procurement of riparian easements is a complicated process that involves intensive planning, knowledgeable project staff, willing landowners and the funding to purchase the easements. The conservation easements acquired during this project are perpetual and should stay in the public trust for perpetuity. Evaluating the landscape changes over the next 100 years and how these easements influence the stream corridors they are designed to protect will add to our understanding of riparian dynamics. As a result of coordinated funding between GLBFHP and LSOHC much more was accomplished during this project than was ever anticipated. Three major parallel developments aided in the accomplishments of this project.

The first development was the formation of the LSOHC and the allotment of approximately one million dollars in funding to procure easements for this project. This resulted in the purchase of many more new easements than anticipated before the project began. The referendum to fund the Minnesota Clean Water Land and Legacy Amendment has been instrumental in addressing the decline in fish and wildlife habitat, and water quality issues statewide.

The second development was the legislative audit that required the MN DNR to assess and monitor all state owned land and private land parcels containing conservation easements within a short window of time (three years). This resulted in the creation of two very important database programs: the LRS provided a software program that allowed easement documents to be entered, tracked and achieved; and the CEMS software provided a database to enter the baseline survey information so future assessments could be compared to easement criteria and entered into the system for long term monitoring.

The third development was the continued development and availability of MN DNR GIS layers that were utilized during this project. This allowed limited staff resources to focus on procuring and assessing easements (developments 1 and 2 above). The GIS based atlases that were built as a result of this project have already been incorporated into the state-wide system and can easily be updated by each of the inland Areas as more funding becomes available for additional easement acquisition.

A related activity to this project that has occurred within the last 3 years is large land and conservation easement purchases from private individuals or companies in the Lake Superior watershed by the MN DNR Forest Legacy Program. This program is also funded by the LSOHC. One example is the purchase of a conservation easement that encompassed 10,581 acres from the Marlow Timber Company at a cost of $5.65 million dollars. This transaction provides riparian protection for 3.9 miles of the Manitou River and 0.4 miles of the Stewart River (Figure 14) that were previously ranked and under consideration for purchase within this project. Additional purchase of large land tracts or conservation easements will only enhance the resource protection sought by many citizens.

Unfortunately, in the short term, there were more landowners willing to sell easements than funding allowed during this project (Table 7). Despite the continued high interest by both citizens and landowners, much of the acquisition in the state has been put on hold until assessments of current land holdings and easements have been completed as directed by the legislative audit. Due in large part to the results of this project, most of the assessment work on fisheries conservation easements in Region 2 (NE MN) has been completed. Once Divisions within the MN DNR comply with the legislative audit and monitoring baselines are recorded on all easements in the CEMS it is anticipated that funding will again be allotted for additional purchase of easements.

This project can now be used as a template for the inland Areas to continue easement acquisition in the Lake Superior watershed as staff time and dollars for purchase allows. The atlases were produced as reference documents, and were built so new information can be added and/or modified as required. Staff training has occurred as a result of this project and if funds are again appropriated for easement purchase there should be a reduced learning curve for implementation. On a related note, organizations such as MNTU, the Minnesota Land Trust, and the Nature Conservancy of Minnesota have all expressed interest in this project and will benefit from the products produced. In many cases non-profits have an easier time acquiring funding to procure easements than the MN DNR. In some cases they can acquire easements more rapidly and once the transaction is complete they can "gift" them to the MN DNR for long term holding and administration.

The dedication of Area, Regional and Central Office staff from Fisheries, Lands and Minerals and Administration that worked on this project was critical to its successful completion. These folks believed in the outcome of the project and were aware of the long-lasting positive impacts it will have on both fish and wildlife resources in the Lake Superior watershed. Without their dedication this project would not have been nearly as effective.

The general support received from conservationists, anglers, the general public and LUGs has been extremely gratifying. Citizens understand that by preserving these critical riparian areas in perpetuity they have protected these important corridors for generations to come. In addition, these easements will continue to provide angling access which may become more scare and much more appreciated in the future than it is today. Given the changes that have occurred over the last 100 years it is somewhat alarming to look out over the next 100 years and contemplate how the landscape may look in 2115. It may not surprise us that these riparian corridors along North Shore streams that are being protected today may be some of the most significant fish and wildlife habitat remaining for generations to come.

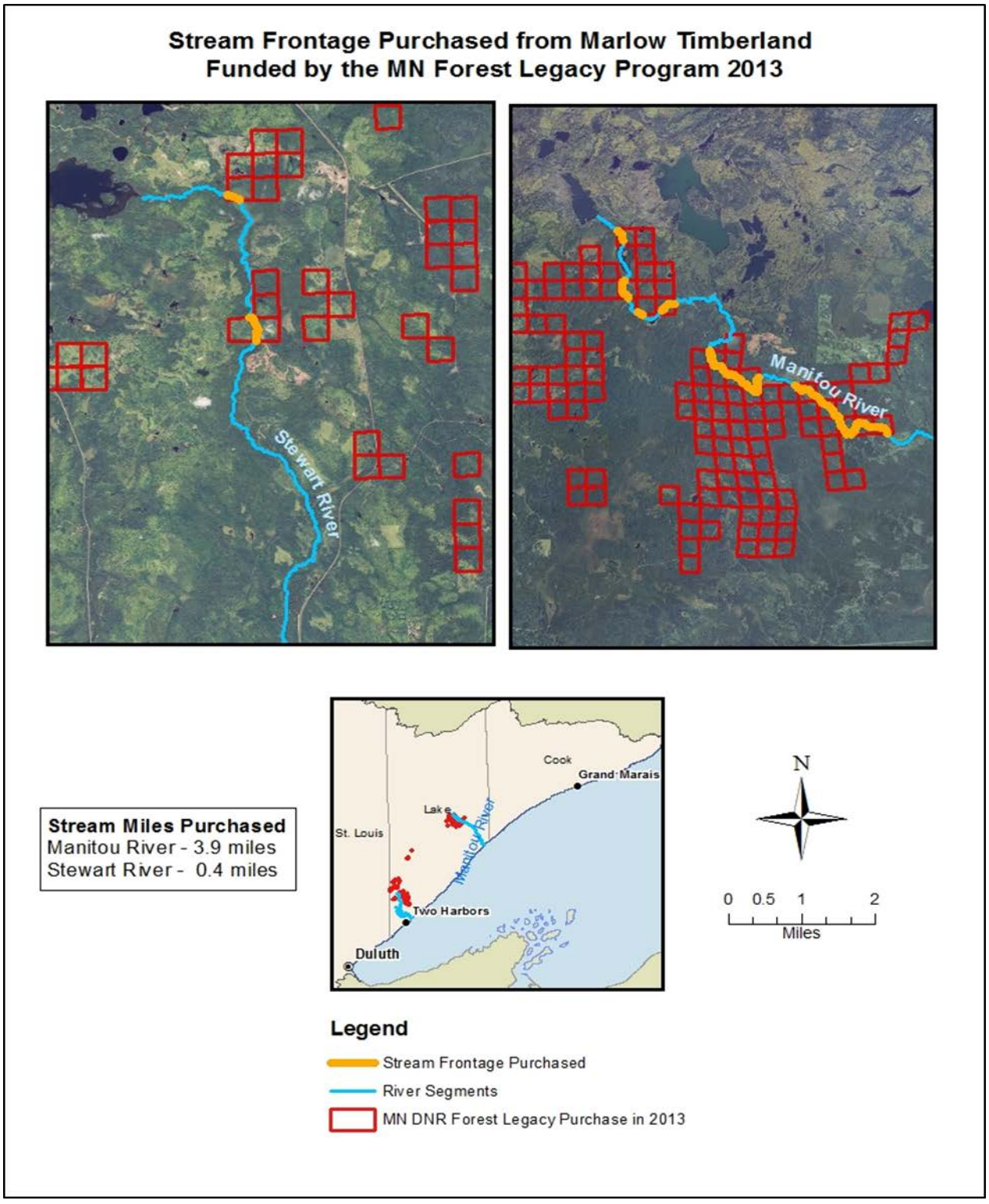


FIGURE 14. Forest Legacy purchase of Marlow Timberland LLC lands in 2013. Significant riparian areas added as part of this purchase.

TABLE 7. Summary of landowners interested in selling easements, but no funding available.

Fisheries Area	Stream	Easement Length (ft.)	Easement Length (mi.)	Easement Acres	Approximate Easement Value
Finland	Baptism River	6,633.70	1.26	29.7	$120,118.00
Finland	Baptism River	712.50	0.13	1.4	$5,169.00
Finland	Baptism River	6,906.20	1.31	30.3	$123,237.00
Finland	E. Br. Beaver River	1,446.60	0.27	6.6	$26,555.00
Finland	E. Br. Split Rock River	978.80	0.19	4.0	$11,397.00
Finland	E. Br. Split Rock River	11,170.70	2.12	49.8	$136,817.00
Duluth	Gooseberry River	1,857.50	0.35	8.4	$22,944.00
Duluth	Silver Creek (Silver Creek Twp.)	1,764.40	0.33	7.7	$21,340.00
Duluth	Silver Creek (U.T. #2)	1,533.60	0.29	6.9	$15,859.00
Finland	W. Br. Split Rock River	5,468.00	1.04	21.6	$62,457.00
Totals	**10**	**38,472.00**	**7.28**	**166.4**	**$545,893.00**

ACKNOWLEDGEMENTS

We thank the staff from the MN DNR Duluth, Finland and Grand Marais Fishery Areas; Pat Rivers and Rick Walsh from the Section of Fisheries, St. Paul; and Carla Backstrom and Chad McDonald, from Lands and Minerals for their assistance in acquiring the many easements included in this project. We also want to thank Jonah Dagel, Waterville Fisheries, for his initial work on this project. Funding for this work was provided by the Great Lakes Basin Fish Habitat Partnership (NFHAP), the Lessard-Sams Outdoor Heritage Council and the MN DNR Section of Fisheries. We thank Leslie Tannahill and Pam Hetland for their assistance with the budget; Mary Negus and Tim Goeman for their editorial suggestions; and many of the local fishing and conservation organizations for their support of this project. We would especially like to thank all the willing landowners that participated, since without their cooperation the project would not have been possible.

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APPENDIX A

MINNESOTA STATUTES 2012 84.0272
84.0272 PROCEDURE IN ACQUIRING LANDS.

Subd. 1. Acquisition procedure. When the commissioner of natural resources is authorized to acquire lands or interests in lands the procedure set forth in this section shall apply. The commissioner of natural resources shall first prepare a fact sheet showing the lands to be acquired, the legal authority for their acquisition, and the qualities of the land that make it a desirable acquisition. The commissioner of natural resources shall cause the lands to be appraised. An appraiser shall before entering upon the duties of office take and subscribe an oath to faithfully and impartially discharge the duties as appraiser according to the best of the appraiser's ability and that the appraiser is not interested directly or indirectly in any of the lands to be appraised or the timber or improvements thereon or in the sale thereof and has entered into no agreement or combination to purchase the same or any part thereof, which oath shall be attached to the report of the appraisal. The commissioner of natural resources may pay less than the appraised value, but shall not agree to pay more than ten percent above the appraised value, except that if the commissioner pays less than the appraised value for a parcel of land, the difference between the purchase price and the appraised value may be used to apply to purchases at more than the appraised value. The sum of accumulated differences between appraised amounts and purchases for more than the appraised amount may not exceed the sum of accumulated differences between appraised amounts and purchases for less than the appraised amount. New appraisals may be made at the discretion of the commissioner of natural resources.

Subd. 2. Stream easements.

(a) Notwithstanding subdivision 1, the commissioner may acquire permanent stream easements for angler access, fish management, and habitat work for a onetime payment based on a value attributed to both the stream and the easement corridor.
The payment shall equal:

(1) the per linear foot of stream within the easement corridor times $5; plus
(2) the easement corridor acres times the estimated market value.

(b) The estimated market value is equal to:

(1) the agricultural market value plus the rural vacant market value plus the managed forest market value; divided by
(2) the acres of agricultural land plus the rural vacant land plus the managed forest land.

(c) The agricultural market value, rural vacant market value, and managed forest market value or equivalent are determined from data collected by the Department of Revenue during its annual spring mini abstract survey. If the Department of Revenue changes its property type groups for its annual spring mini abstract survey, the agricultural market value, the rural vacant market value, and the managed forest market value shall be determined by the commissioner from data collected by the Department of Revenue in a manner that provides the most reasonable substitute for the market values as presently reported. The commissioner must use the most recent available data for the city or township within which the easement corridor is located.

(d) The commissioner shall periodically review the easement payment rates under this subdivision to determine whether the stream easement payments reflect current shoreland market values. If the commissioner determines that the easements do not reflect current shoreland market values, the commissioner shall report to the senate and house of representatives natural resources policy committees with recommendations for changes to this subdivision that are necessary for the stream easement payment rates to reflect current shoreland market values. The recommendations may include an adjustment to the dollar amount in paragraph (a), clause (1).

Subd. 3. Minimal value acquisition. (a) Notwithstanding subdivision 1, if the commissioner determines that lands or interests in land have a value less than $100,000, the commissioner may acquire the lands for the value determined by the commissioner without an appraisal. The commissioner shall make the determination based upon:

(1) up to the most recent assessed market value of the land or interests in land as determined by the county assessor of the county in which the land or interests in land is located, plus ten percent;
(2) a sale price of the land or interests in land, provided the sale occurred within the past year;
(3) the sale prices of comparable Department of Natural Resources land sales or acquisitions of interests in land located in the vicinity and sold within the past year; or
(4) an appraisal of the land or interests in land conducted within the past year.
(5) in the event the value is less than $1,000, the commissioner may add a transaction incentive, provided that the sum of the incentive plus the value of the land does not exceed $1,000.

Subd. 4. Agreement by landowner. The commissioner shall utilize the valuation methods prescribed in subdivisions 2 and 3 only with prior consent of the landowner from whom the state proposes to purchase land or interests in land.

Subd. 5. Easement information. Parties to an easement purchased under the authority of the commissioner must:

(1) specify in the easement all provisions that are perpetual in nature;
(2) file the easement with the county recorder or registrar of titles in the county in which the land is located; and
(3) submit an electronic copy of the easement to the commissioner.

History: 1975 c 144 s 1; 1980 c 458 s 10; 1984 c 553 s 1; 1986 c 444; 1987 c 404 s 92; 1989 c 335 art 1 s 67; 2002 c 366 s 1; 2004 c 262 art 2 s 1,2; 2007 c 57 art 1 s 21; 2007 c 131 art 2 s 1; 2011 c 3 s 1.

APPENDIX B

Once easement baseline field work was completed, data was prepared for entry into the Conservation Easement Monitoring System (CEMS). CEMS is a Microsoft Access based program created by MN DNR staff to provide temporary storage of all conservation easement monitoring data collected statewide (Golner et al. 2014). Comprehensive data storage and management systems such as CEMS are an essential part of the long term stewardship of conservation easements and are considered "industry standard" (LaChapelle et al. 2013).

CEMS is designed to interface with the ArcGIS program ArcMap. ArcMap is the MN DNR preferred program for providing geospatial reference capability and enables the production of maps and shapefiles necessary for accurate fieldwork. Both programs are part of the MN DNR statewide computer network and can be accessed via any computer by all authorized staff. When used together, CEMS and ArcMap ensure accurate, secure, systematic management and storage of all conservation easements currently held by the MN DNR.

Some of the important attributes of CEMS (Figure B-1) include the following:

- Provides a comprehensive list of all easements statewide that are easily accessible via a single drop down menu
- CEMS saves data as it is typed reducing the likelihood of losing data
- Store data from both baseline surveys and subsequent easement monitoring events within the same easement record
- Includes landowner contact information for each easement so they can be notified of any proposed field work
- Integrates with ArcMap software for easy printing of maps
- Able to print worksheets with a list of all easement terms and other pertinent information for use in the field if needed (note: it is important to make sure the easement terms found in CEMS match those of the original easement document)
- Able to upload field photos for archival and management purposes which may also be used to create photo point reference maps via ArcMap
- Text boxes are included for each easement term providing opportunity to include whether landowners are in compliance or not
- All non-compliance concerns are automatically flagged and notifications sent to the appropriate MN DNR staff for resolution

The *Conservation Easement Stewardship Training Manual*, (Golner et al. 2014) has been created as a user guide and is essential for use with CEMS.

Field Data Collection, Preparation and Storage

Four types of electronic data were collected during field baseline surveys - digital geo-referenced photos, GPS tracks, GPS waypoints and field notes. All were collected using a Garmin Montana 650t GPS/camera. Two photos were taken at each stream photo point- one looking downstream (always taken first) and one looking upstream. If management concerns or other issues were observed, a third or fourth photo was taken at that photo point.

Geo-referenced Photos - Two photos were taken at each stream photo point; one looking downstream (always taken first) and one looking upstream. If management concerns or other features were observed, photos were taken to document those as well. Once back from the field, digital photos for each stream easement were archived in two separate folders for that stream; one folder contained the entire raw, untouched photo series and the other contained photos prepared for upload into CEMS. Preparing photos for upload included selecting images that met certain quality standards at each photo point, such as adequate image clarity, lighting and subject content. Once photos were selected for upload, they were renamed to include photo number and easement familiar name. This step ensured that photos printed in the CEMS photo packet could easily be cross-referenced to archived photos if needed for closer examination.

The CEMS also requires that photos have additional details including a series of four "tag" letters and a brief description of the photo. Tag letters (Y and N) were necessary to associate each photo with either an initial baseline survey or a future monitoring event. The other three categories corresponded to: 1) potential management concerns (violations), 2) whether the photo point was an easement access point and 3) whether there where habitat concerns (beaver dams, bank erosion, etc.). Descriptions were brief and always noted whether the photo was taken looking down or upstream and whether the photo was taken at downstream or upstream boundaries. Additional text describing management concerns were included such as the height and length of bank erosion, lack of tree cover, etc.

Once photo preparation was completed, photos were transferred to a temporary upload folder and uploaded into CEMS using an Arc Map tool created in-house named Create Photo Points and Copy to I Drive (Figure B-2). This process copies photos to the statewide I Drive network and allows CEMS users to print a Photo Packet that includes all easement photos and associated photo metadata (Figure B-3).

The same photos were also used to create photo point maps (Figure B-4). This was done with the Baseline Report Maps Arc Map tool. Once photos were available on the statewide network drive, photo point maps could be printed for each easement visited. Once produced, each photo point on the map corresponds to the photo number, location and direction of the photo taken in the field. This Baseline Photo Point Map is designed as a companion to the photo point packet.

GPS Tracks and Waypoints - GPS tracks and waypoints were also collected in the field. Many proposed and existing easements were in remote and heavily forested areas and if routes were found to pass near an easement corridor, the trail was followed and tracked (Figure B-5). Track shape files were then attached to the appropriate easement in CEMS as a navigation aid for future monitoring.

GPS tracks were also used to verify alignment of streams drawn via ArcMap to that of the actual stream course in the field, since not all stream courses were visible using multiple aerial photos. In most cases the center of the stream was followed as closely as possible so tracks could be compared with the estimated stream alignment. For example, after analyzing the actual stream course for Irish Creek, it was determined that not enough of the stream was on private property and the proposed easement purchase was withdrawn.

Waypoints were generally taken of objects outside the stream bed such as deer stands, cabins, other structures, rare natural features and survey markers. Waypoint shape files provided greater precision than geo-referenced photos particularly when waypoint averaging was used. Averaged waypoints noting the location of registered survey markers were saved as attachments in CEMS and also forwarded to MN DNR survey staff in an effort to create the most accurate final easement shape possible.

Field Notes - When necessary field notes were recorded directly on the GPS unit. The large touch screen keyboard on the Montana 650t provided a convenient place for recording details such as dimensions of eroding banks, clearings, rare plants and other features of the easement. Having one tool for recording all necessary information saved time and weight, which was an important consideration in such remote areas accessible by foot only. Upon returning to the office, field notes were downloaded in conjunction with both waypoints and photo points using Garmin's proprietary freeware called BaseCamp. They could then be copied and transferred to both CEMS and photo point descriptions in Windows Photo Viewer.

Baseline Reporting

Eliminating Parcel Slivers - Once an easement has been selected for baseline monitoring from the CEMS drop down menu and a "visit by" date entered, a table of easement ownership points is displayed on the Manage Monitor Event tab. This list is computer generated and is based on the total parcels the easement shape file touches in the ArcMap parcels layer. In most instances, the shapefile inadvertently overlaps other neighboring parcels. These "slivers" can be ignored in all future monitoring events by entering "Y" in the IgPt (ignore point) column. The correct parcels are then labeled "Y" or "N" for baseline or subsequent monitoring in the "BsLn" column.

Status of Easement - By double clicking on the appropriate Point ID row, CEMS creates a monitor record and the Baseline and Monitor Form page appears. A number of fields are displayed including the Baseline Property Conditions section. Here a description of each easement term is found and a corresponding summary of the current easement condition for each easement term is entered. The number of easement terms per easement in the study area ranged from as few as four to 20. Before entering easement term details, it was important to verify that all easement terms were included and correct when compared with the original document (Figure B-6). In the few instances where easement terms did not match up, CEMS staff were notified and corrections made. Though much of the data for each easement was duplicated for each parcel the easement covered, some fields were not and had to be entered for each Point ID.

Issues related to compliance of easement terms can be recorded by selecting the Terms, Conditions and Rights tab. Here, the appropriate easement term can be chosen from a drop down list for each parcel and a brief description of the violation along with photograph numbers and location can be added.

Any additional observations such as invasive species or habitat management concerns were recorded under Monitor Observations/Summary tab. Invasive species and barriers to fish passage were the most frequent observations recorded.

The final step in the CEMS easement monitoring process is found in the Attachments/Signature tab. Once selected, this page allows the easement monitor to attach any significant files as an addendum to the report. As indicated previously, files such as aerial photos depicting prohibited activities within the easement corridor such as motorized trails, structures or tree cutting were attached. Upon final review of all entries, the monitor clicks on the "submit for approval" tab and document set will then be flagged for approval by the area fisheries supervisor.

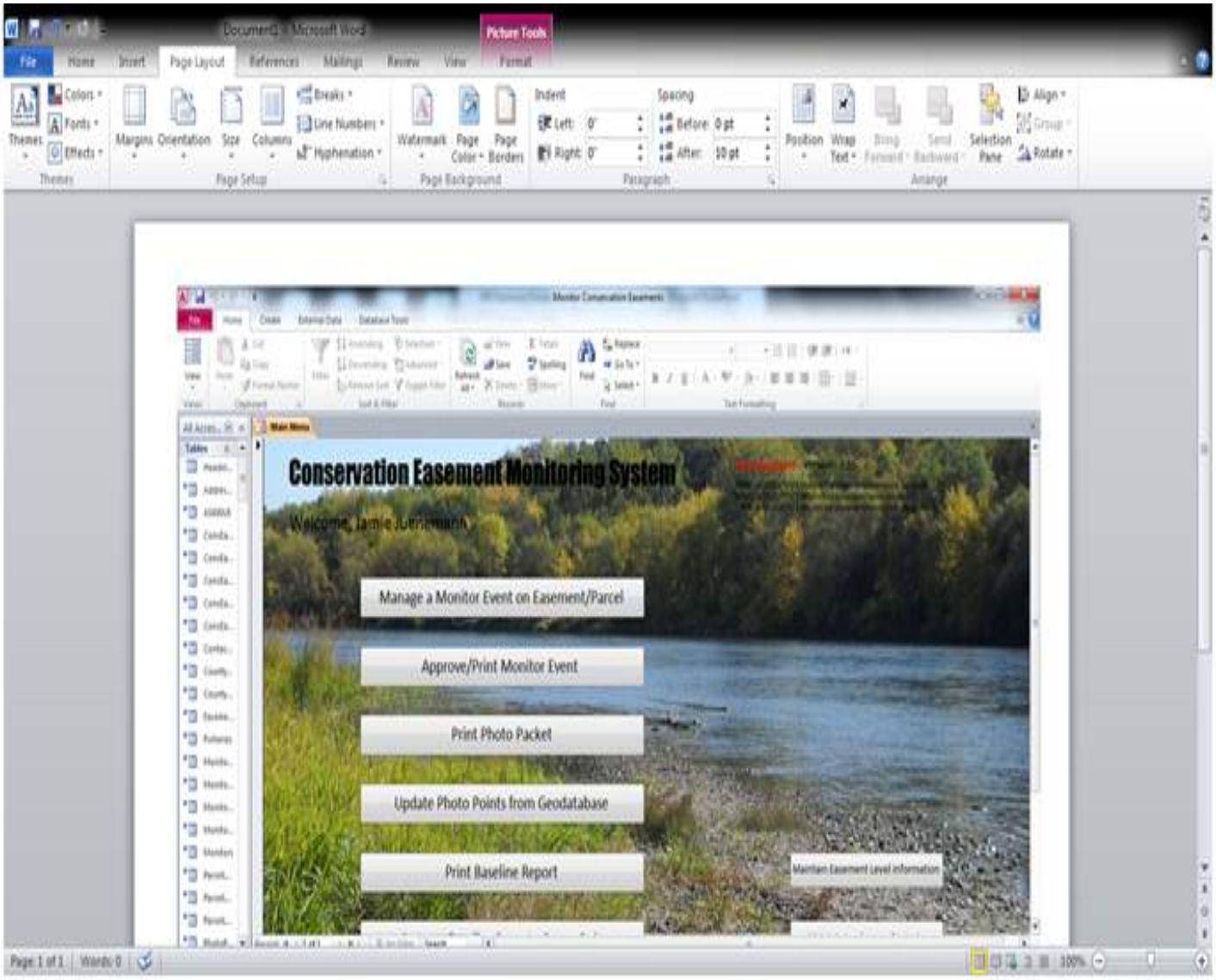


FIGURE B-1. Conservation Easement Monitoring System entry page.

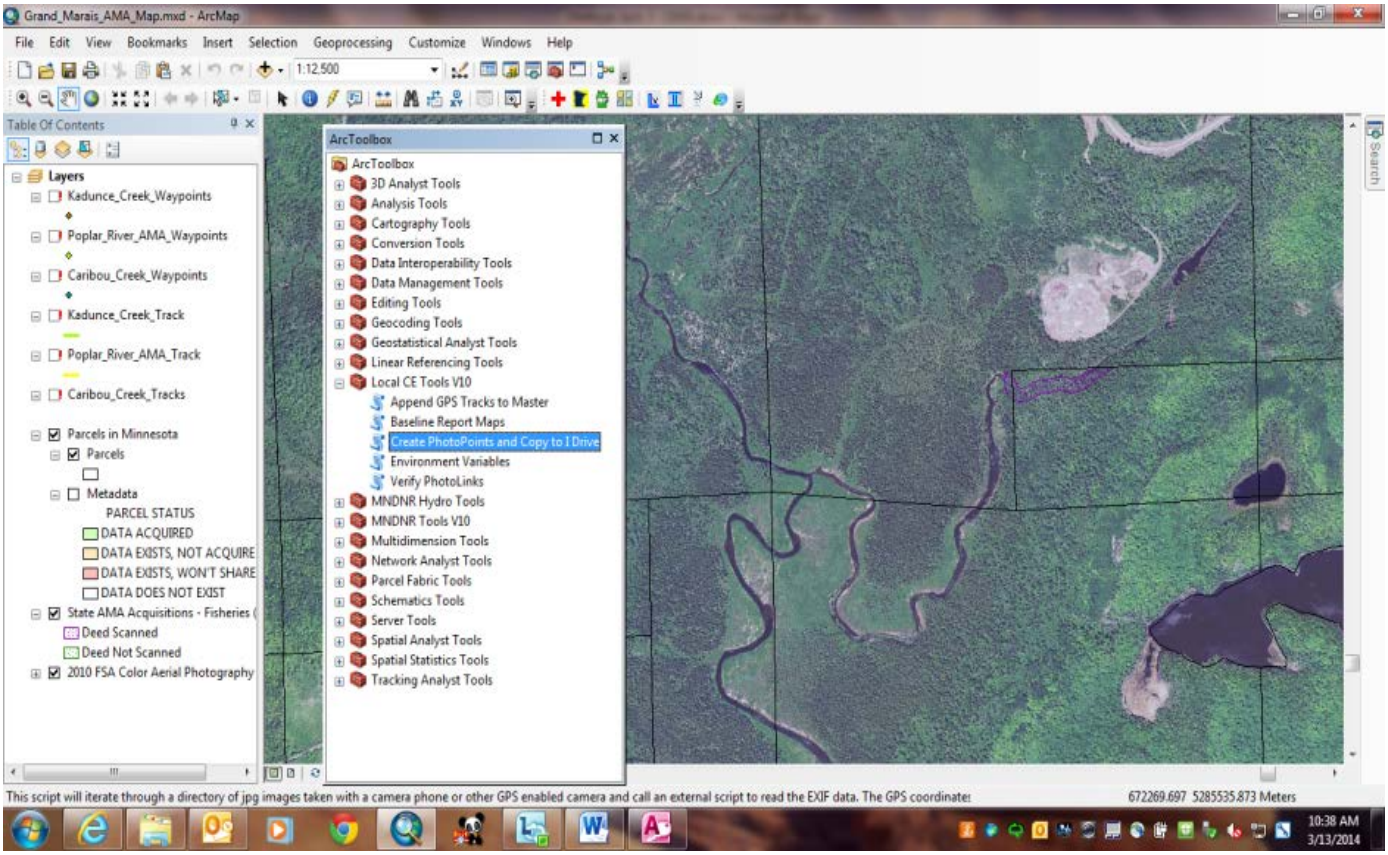


FIGURE B-2. Example of ArcMap photo points and baseline report maps tool**.**

Cascade River AMA- 15[redacted] 20131122

Photo 1

Photo Date:	11/7/2013		
Latitude:	47.7347461	Northing:	5,289,767
Longitude:	-90.5323599	Easting:	685,012
Direction:	202	Bearing:	S
Altitude:	355		

Description: PIN: 031-51-125-3100

Downstream boundary looking downstream

\Photos\Cascade River AMA- 15[redacted],20131122\01 Cascade River AMA- 15[redacted].jpg

Photo 2

Photo Date:	11/7/2013		
Latitude:	47.7347925	Northing:	5,289,772
Longitude:	-90.5323851	Easting:	685,010
Direction:	55	Bearing:	NE
Altitude:	354		

Description: PIN: 031-51-125-3100

Downstream boundary looking upstream

\Photos\Cascade River AMA- 15[redacted],20131122\02 Cascade River AMA- 15[redacted].jpg

Photo 3

Photo Date:	11/7/2013		
Latitude:	47.7358001	Northing:	5,289,887
Longitude:	-90.5311889	Easting:	685,096
Direction:	203	Bearing:	SW
Altitude:	357		

Description: PIN: 031-51-125-3100

Representative photo looking downstream

\Photos\Cascade River AMA- 15[redacted],20131122\03 Cascade River AMA- 15[redacted].jpg

FIGURE B-3. Example of photo packet.

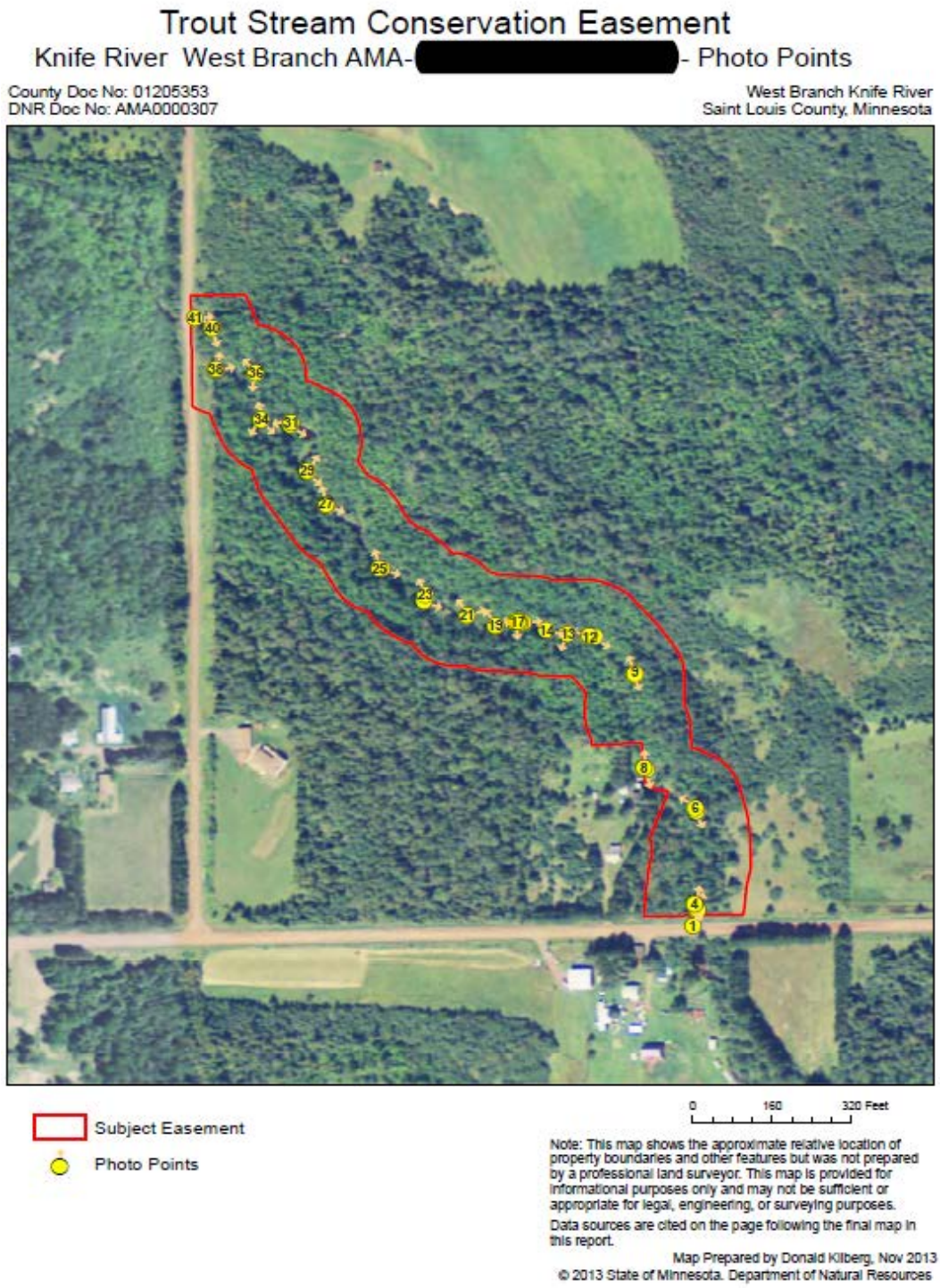


FIGURE B-4. Example of photo points map.

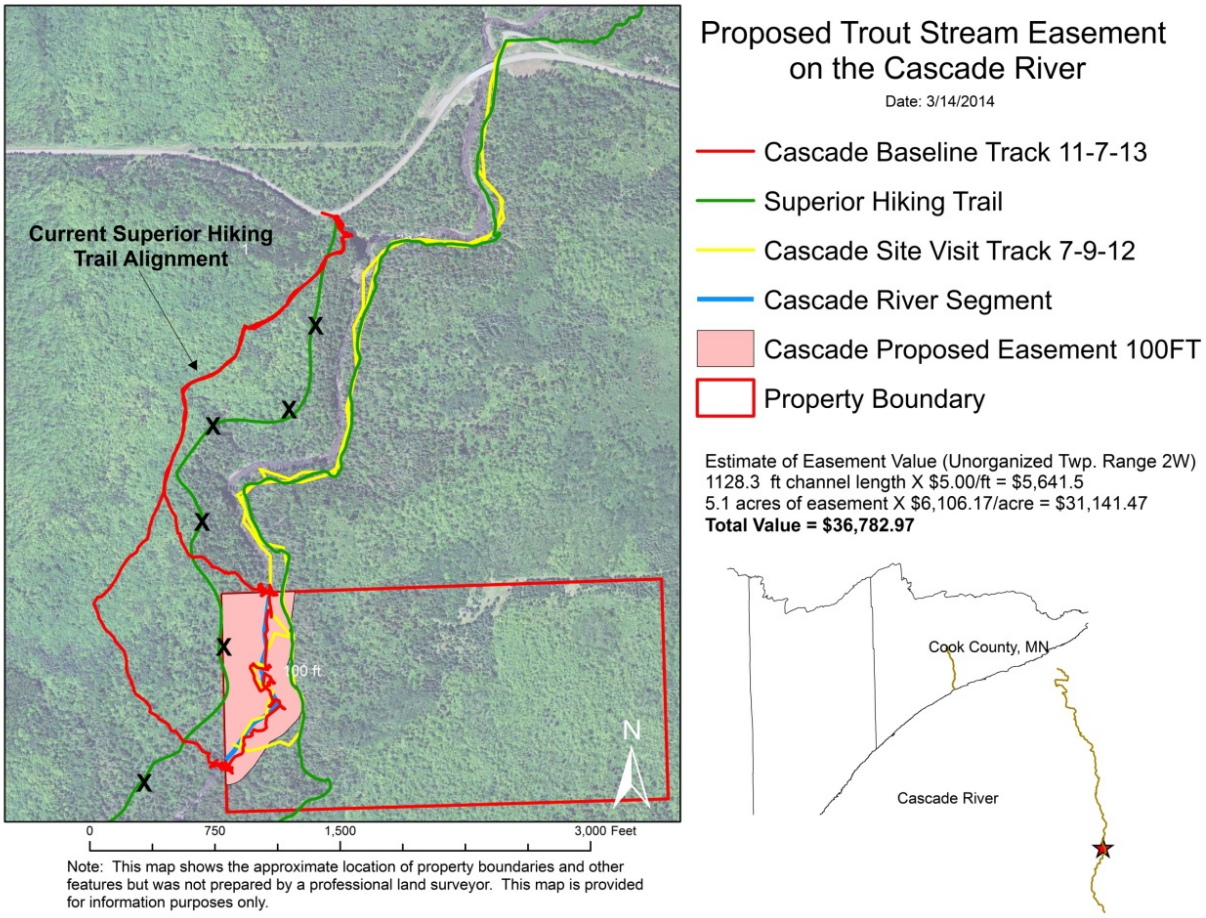


FIGURE B-5. Example of easement map with GPS tracks. Shapefile can be saved as an attachment to CEMS reports.

THE PURPOSE AND INTENT OF THIS EASEMENT IS TO:

1. Permit fish stocking and the development of fish habitat in the above-described area, including tree planting, fencing, erosion control, installation of instream structures, posting of signs and other improvements as are deemed necessary.

2. Permit angling by the public in the above-described area.

ALSO, unto the Grantee, its successors and assigns, ingress and egress to and from said stream at any point over and across the above described parcel, by employees or designees of the Grantee for the purposes of fish management, compatible with the current use. Established access routes shall be used. In the event that there are no established routes or, if such established routes are not feasible for access, Grantee shall notify the Grantors, so that a mutually acceptable access route can be identified.

mn DNR
AFR #

1202825

FURTHER COVENANTING, THE GRANTORS, FOR THEMSELVES, THEIR HEIRS, SUCCESSORS AND ASSIGNS:

A. Shall not place or erect any structure or building in the easement area without prior written approval of the Grantee.

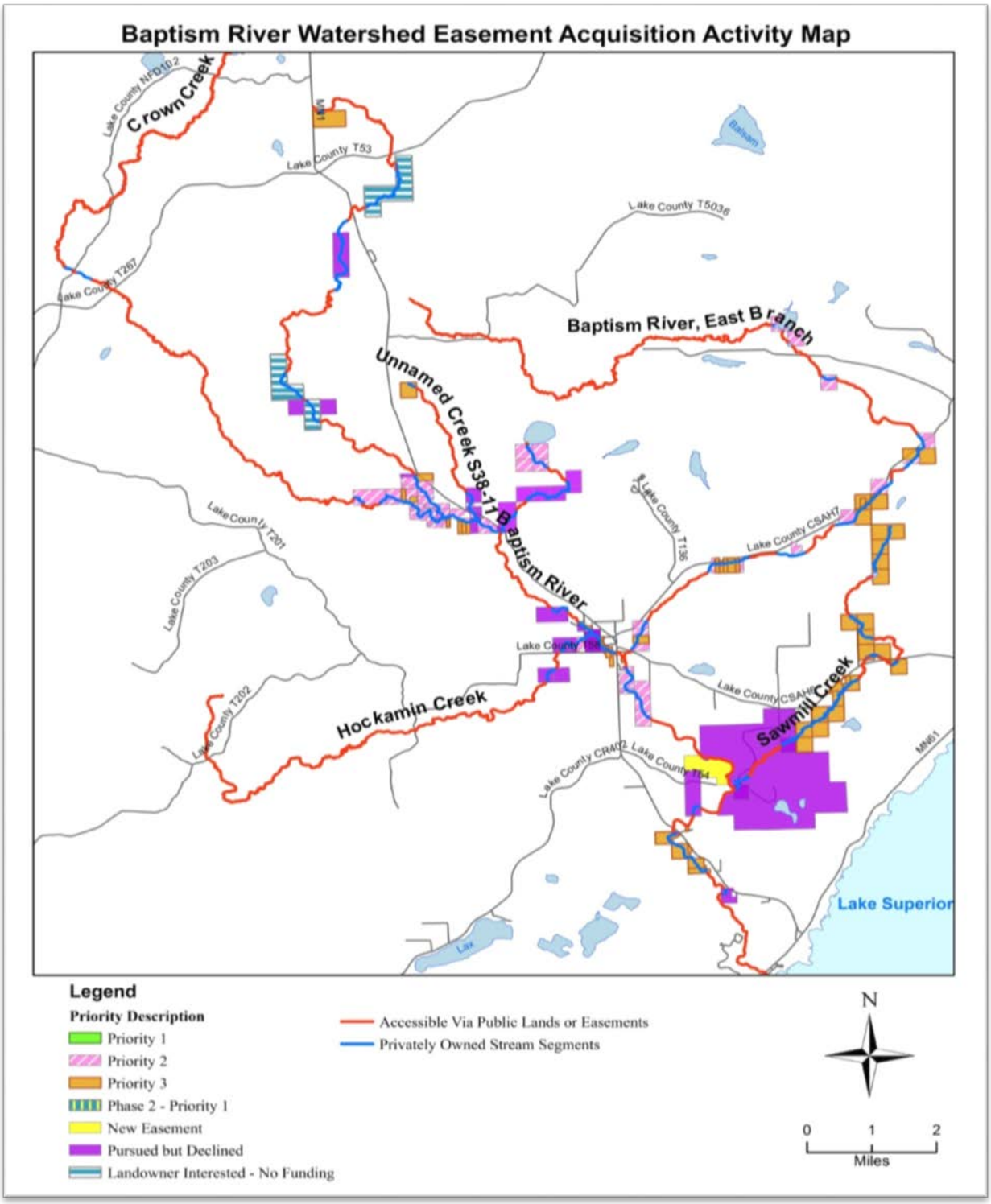
B. Agree to cooperate in the maintenance and enhancement of fishing in the above-described area by doing no excavating, filling, dumping, tree cutting, burning, or changing of the stream course, without prior written approval of the Grantee. A change in the stream course also requires a special permit issued by the Division of Waters of the Department of Natural Resources.

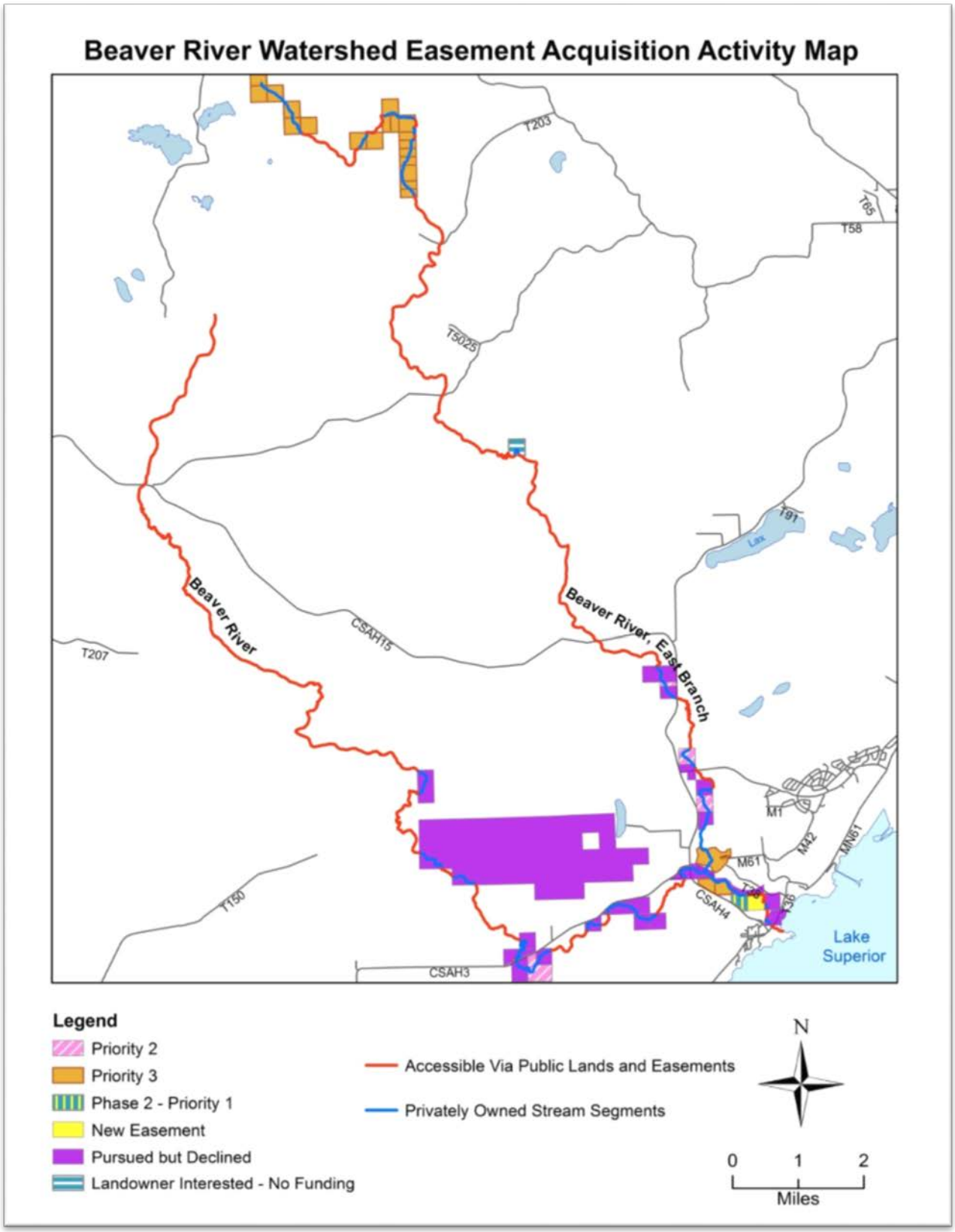
C. Agree that tillage be set back in accordance with the St. Louis County Shoreland Standards for agricultural lands along water bodies designated by the Commissioner of Natural Resources as trout waters and that no new tillage be made within the above described easement corridor.

FIGURE B-6. Example of typical conservation easement conditions.

APPENDIX C

Atlas of prioritized riparian parcels within 31 watersheds for major North Shore streams tributary to Lake Superior. Watersheds are listed in alphabetical order.




Beaver River Watershed Easement Acquisition Activity Map
T203
T65
T58
T5025
T91
Lax
Beaver River
Beaver River, East Branch
CSAH15
T207
M1
M42
MN61
M61
CSAH4
T150
CSAH3
Lake Superior
Legend
Priority 2
Priority 3
Phase 2 - Priority 1
New Easement
Pursued but Declined
Landowner Interested - No Funding
Accessible Via Public Lands and Easements
Privately Owned Stream Segments
N
0
1
2
Miles

Brule River Watershed Easement Acquisition Map

Legend

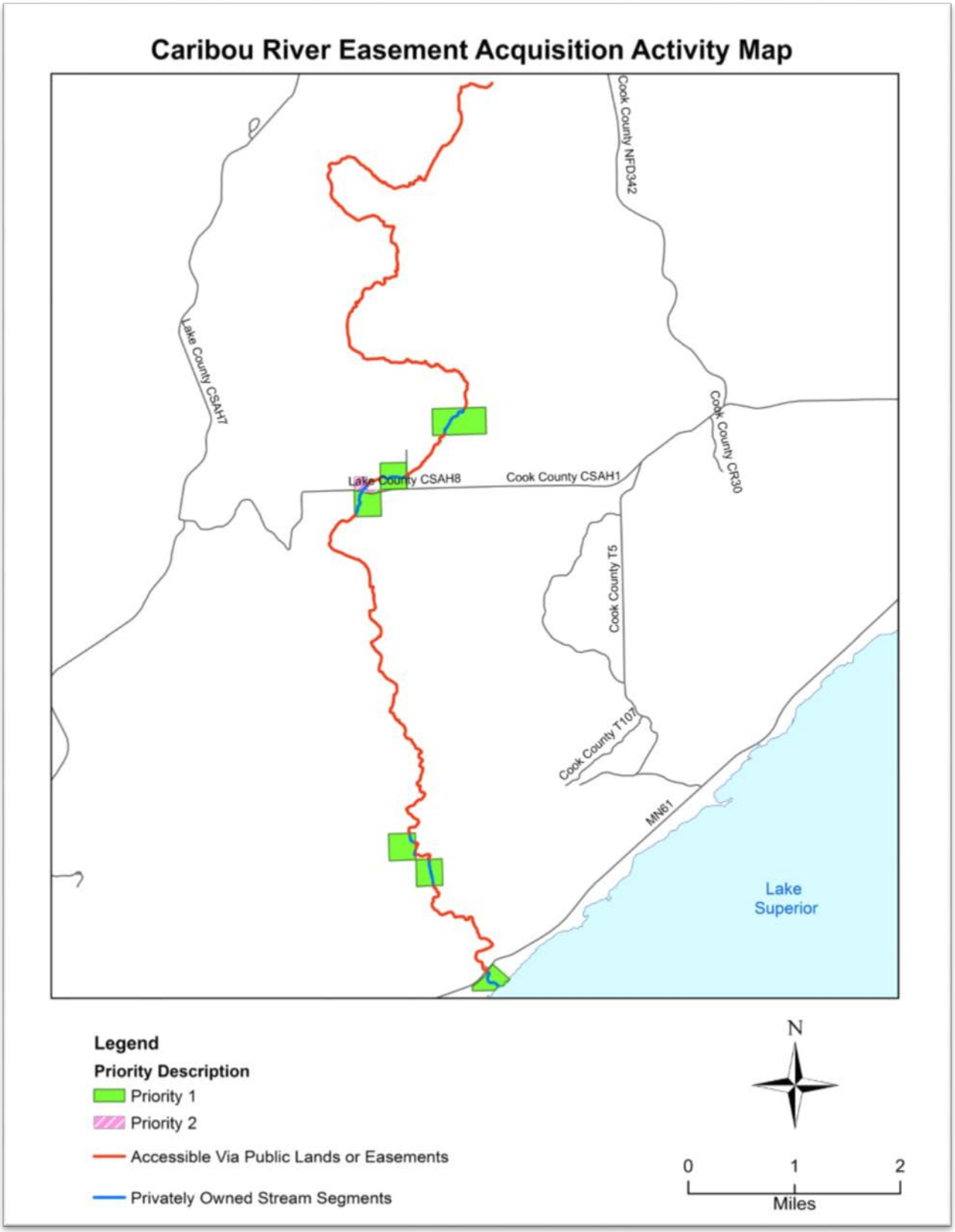
Priority Description

- Priority 2
- Priority 3
- Privately Owned Stream Segments
- Accessible Via Public Lands or Easements

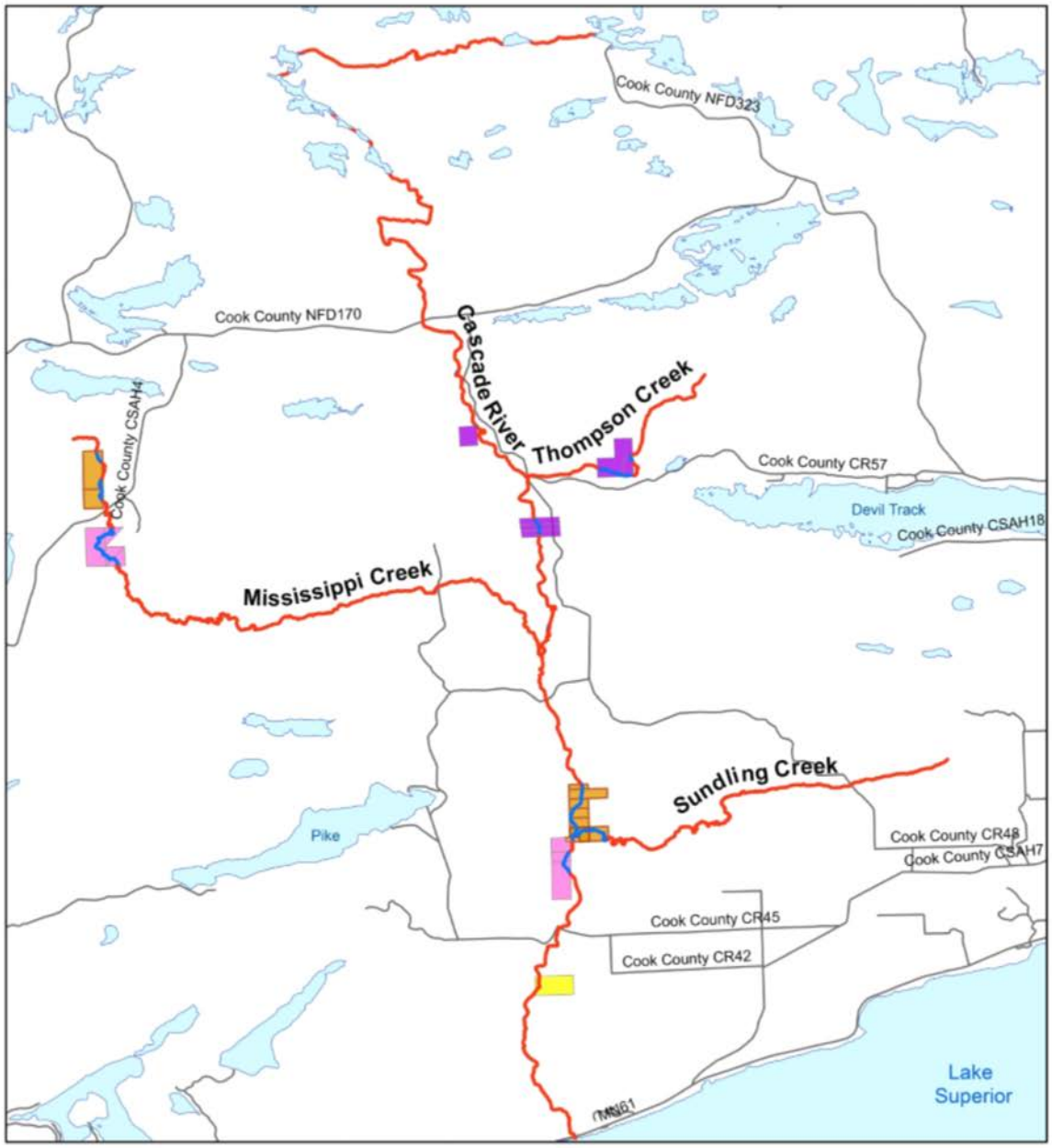
N

0 1 2

Miles


Caribou River Easement Acquisition Activity Map
Cook County NFD342
Lake County CSAH7
Cook County CR30
Lake County CSAH8
Cook County CSAH1
Cook County T5
Cook County T107
MN61
Lake Superior
Legend
Priority Description
Priority 1
Priority 2
Accessible Via Public Lands or Easements
Privately Owned Stream Segments
N
0
1
2
Miles

Cascade River Watershed Easement Acquisition Activity Map



Legend

Priority Description

- Priority 2
- Priority 3
- New Easement
- Pursued but Declined

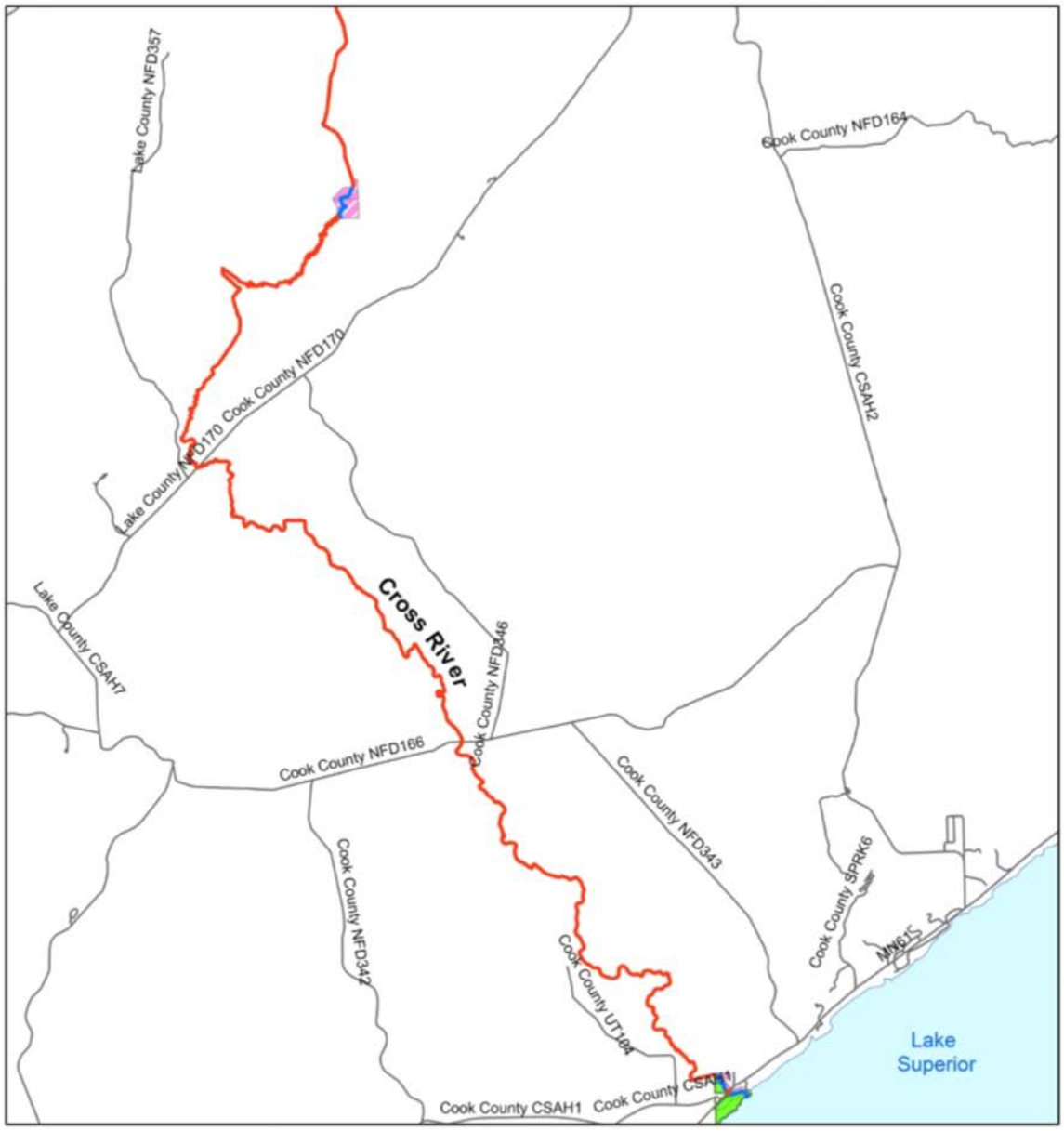
- Privately Owned Stream Segments
- Accessible Via Public Lands or Easements

N

0 1 2

Miles

Cross River Easement Acquisition Activity Map



Legend

Priority Description

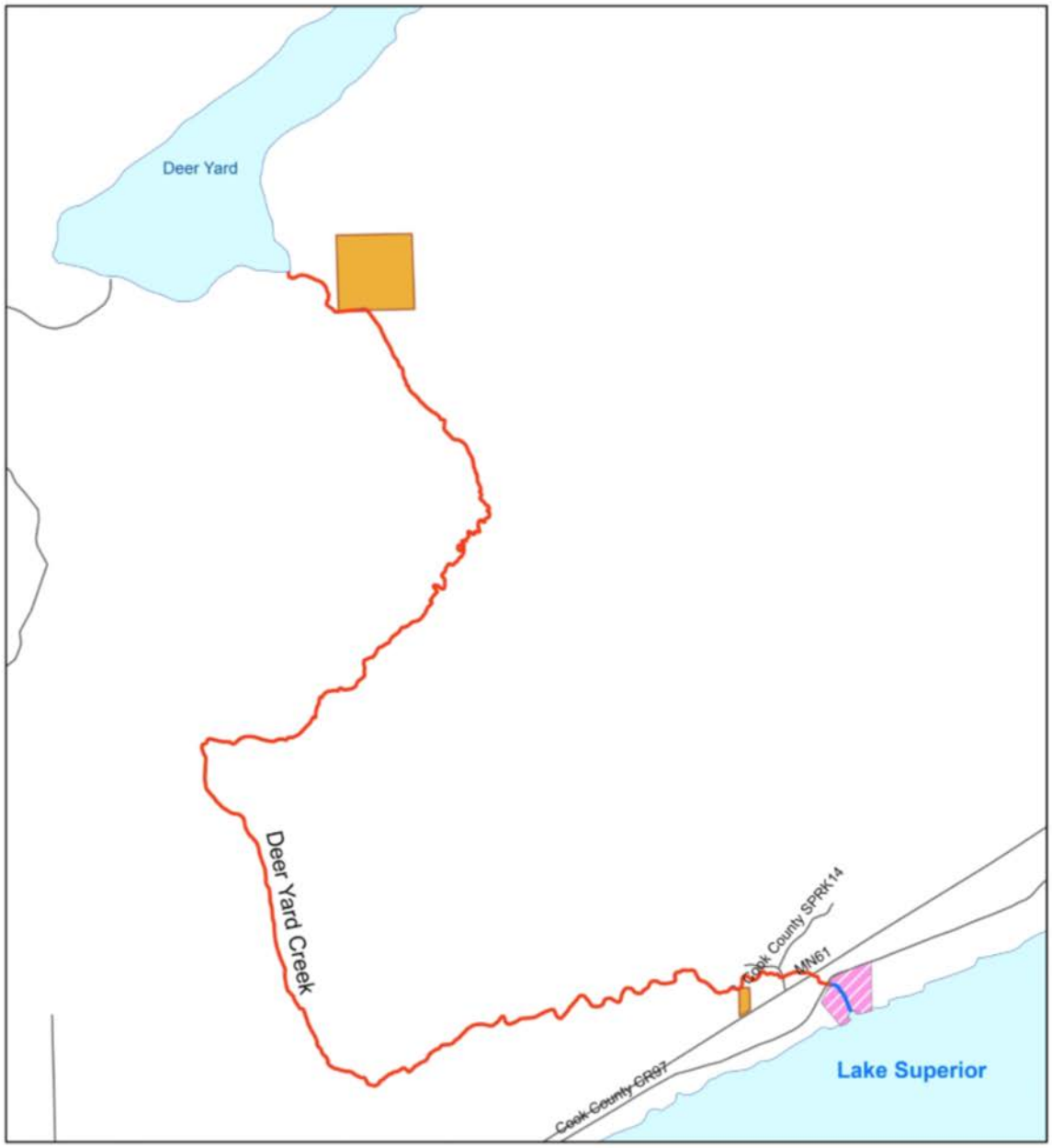
- Priority 1
- Priority 2
- Accessible Via Public Lands or Easements
- Privately Owned Stream Segments

N

0 1 2

Miles

Deer Yard Creek (Spruce) Watershed Easement Acquisition Activity Map



Legend

Priority Description

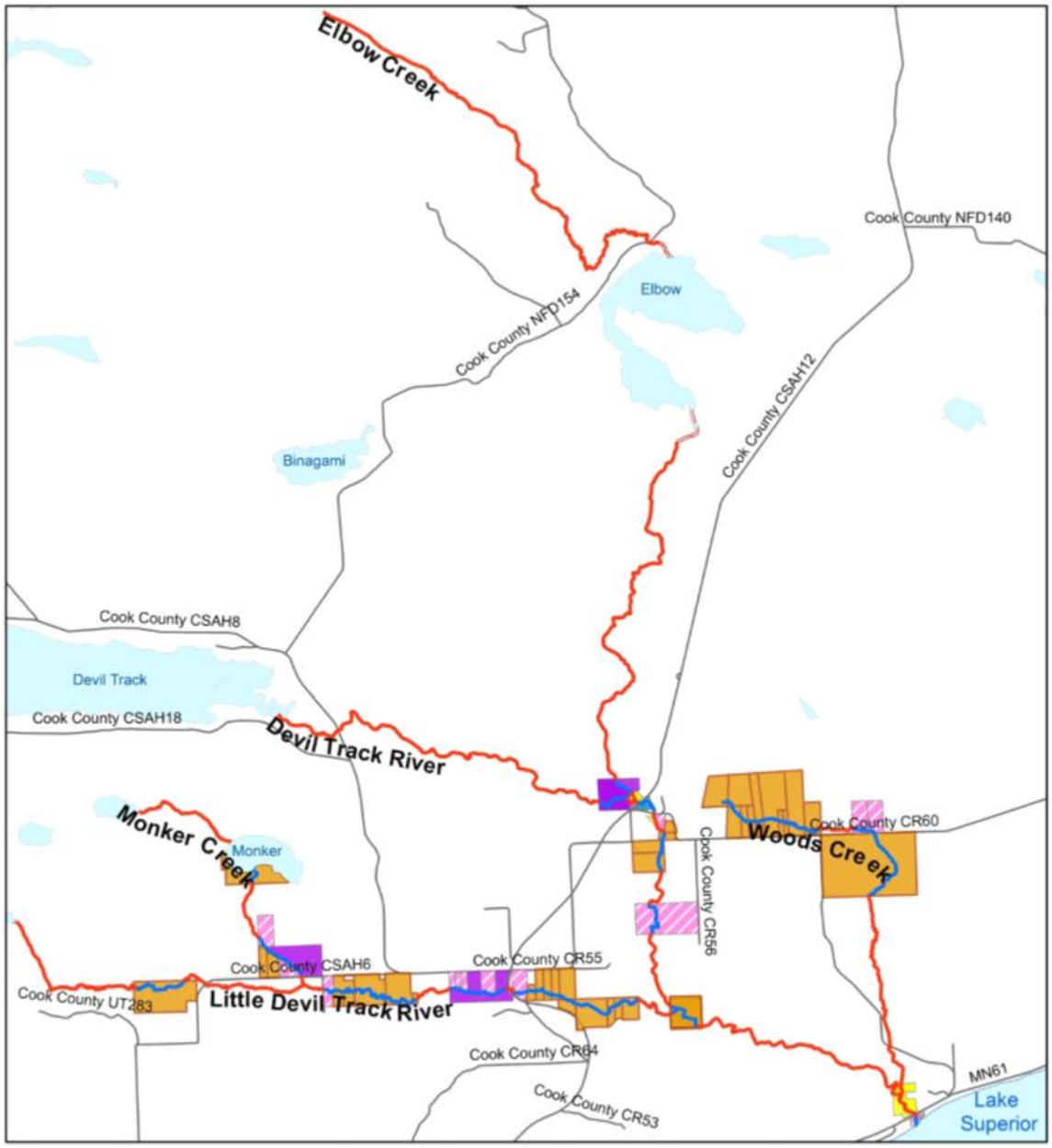
- Priority 2
- Priority 3
- Accessible Via Public Lands or Easement
- Privately Owned Stream Segments

N

0 0.25 0.5

Miles

Devil Track River Watershed Prioritization Map



Legend

Priority Description

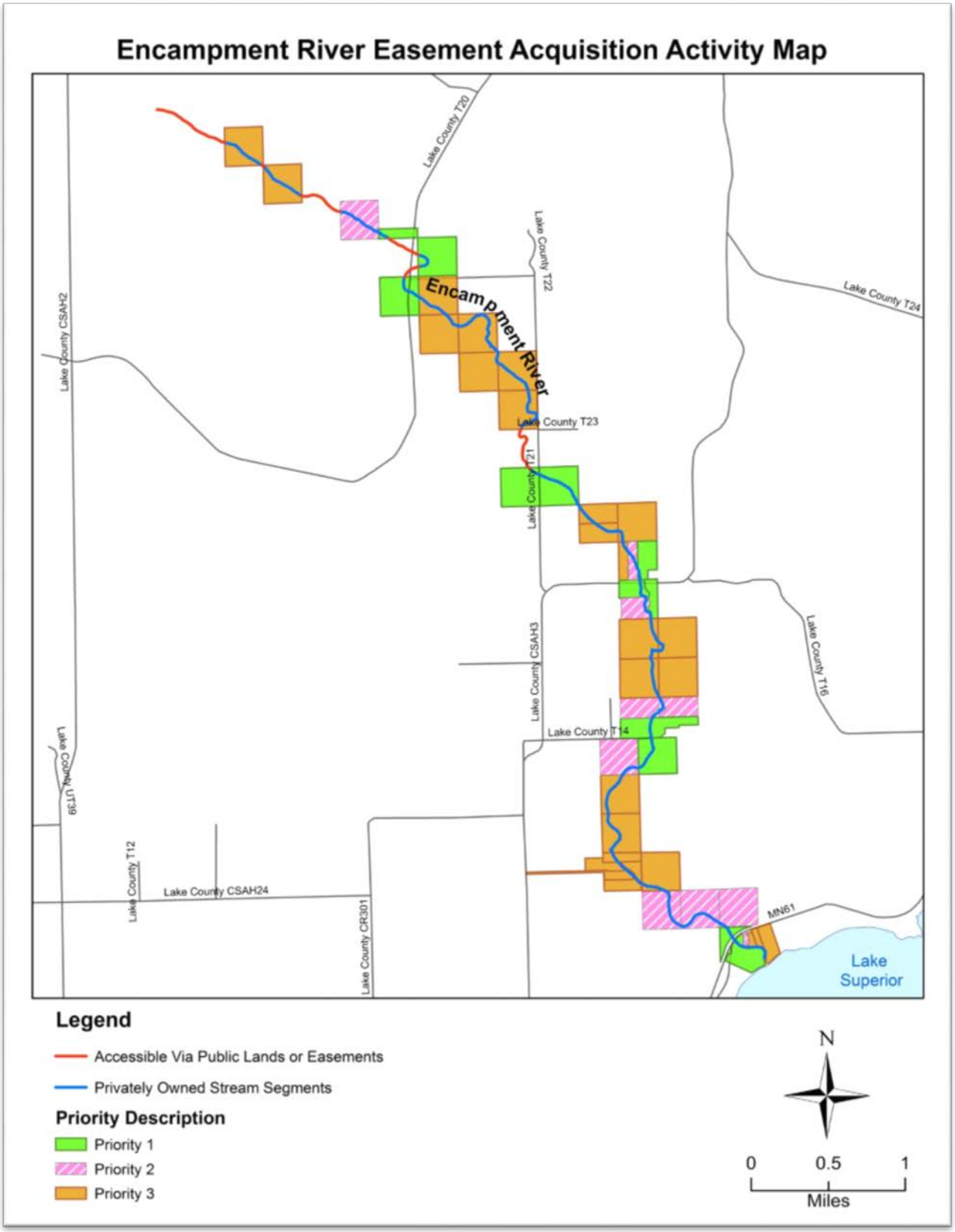
- Priority 2
- Priority 3
- New Easement
- Pursued but Declined
- Interested- trying to split property

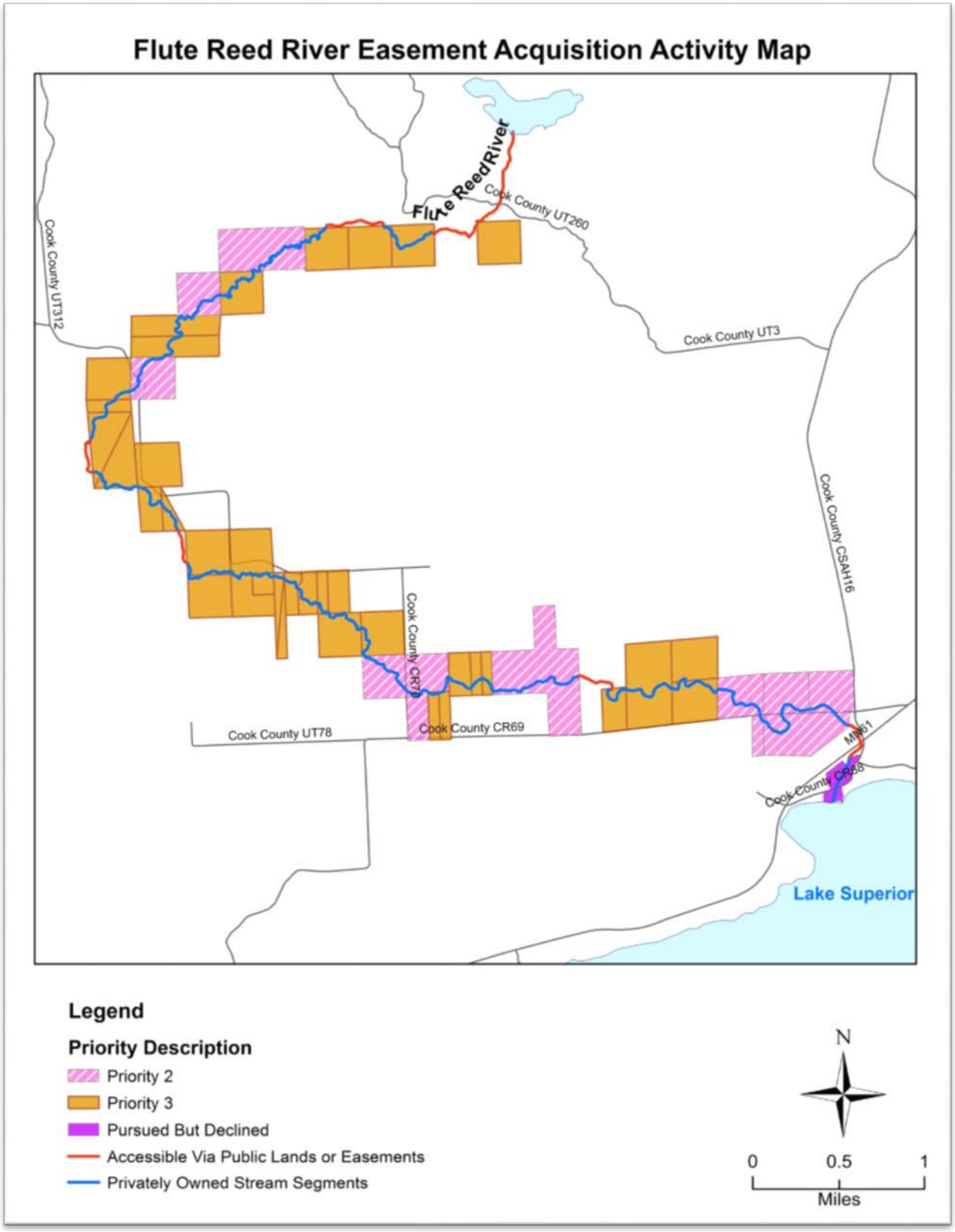
- Accessible Via Public Lands or Easements
- Privately Owned Stream Segments

N

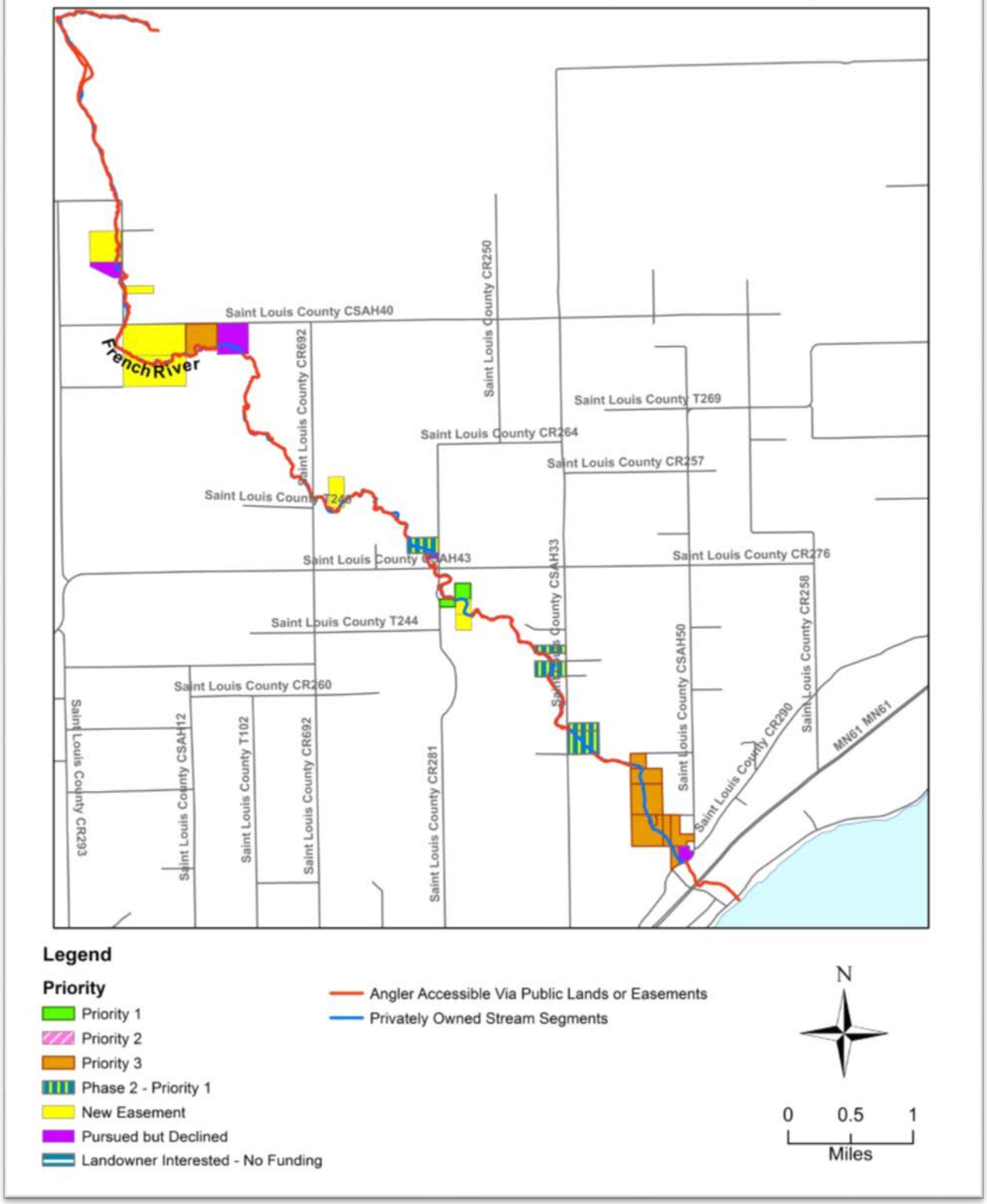
0 1 2

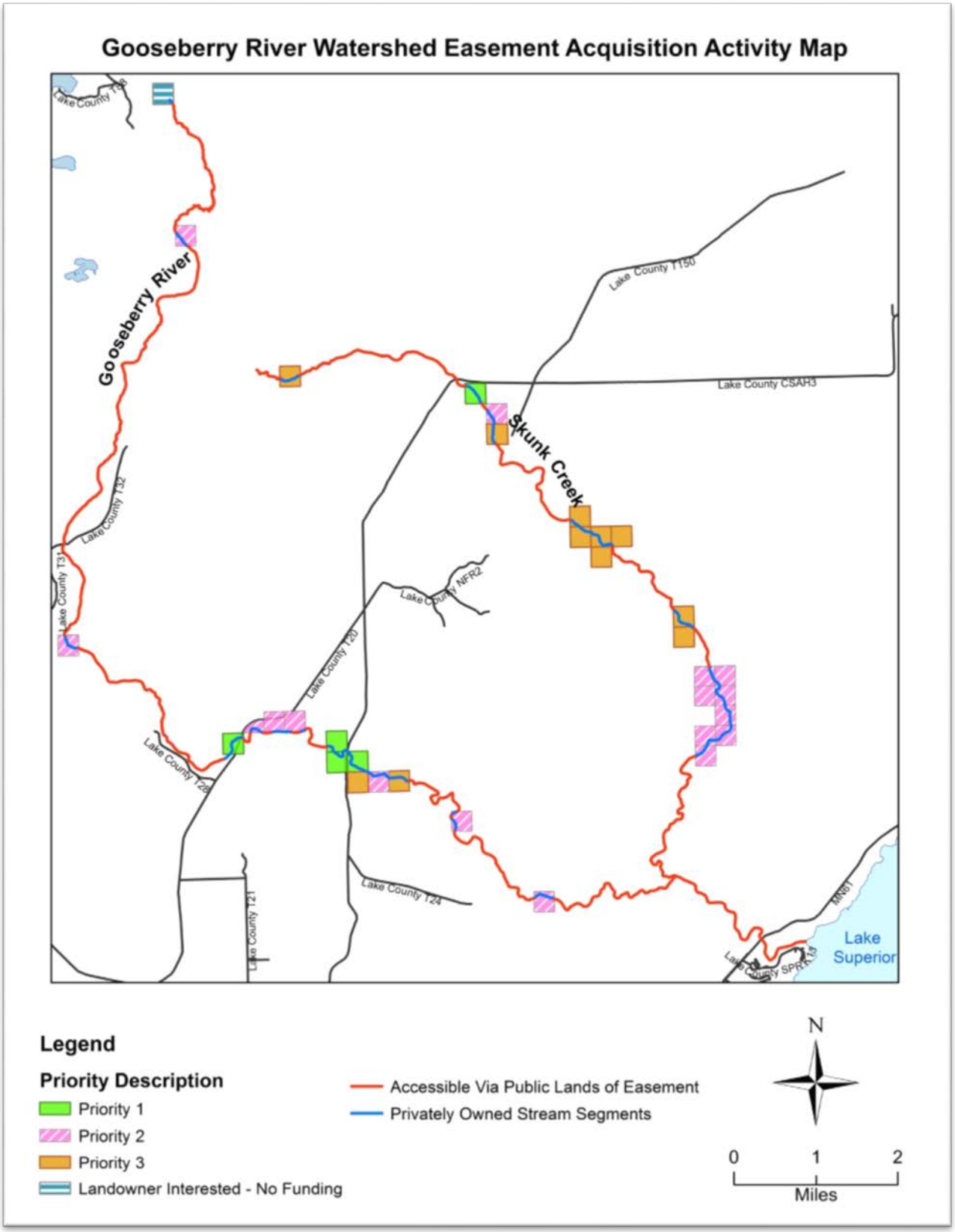
Miles

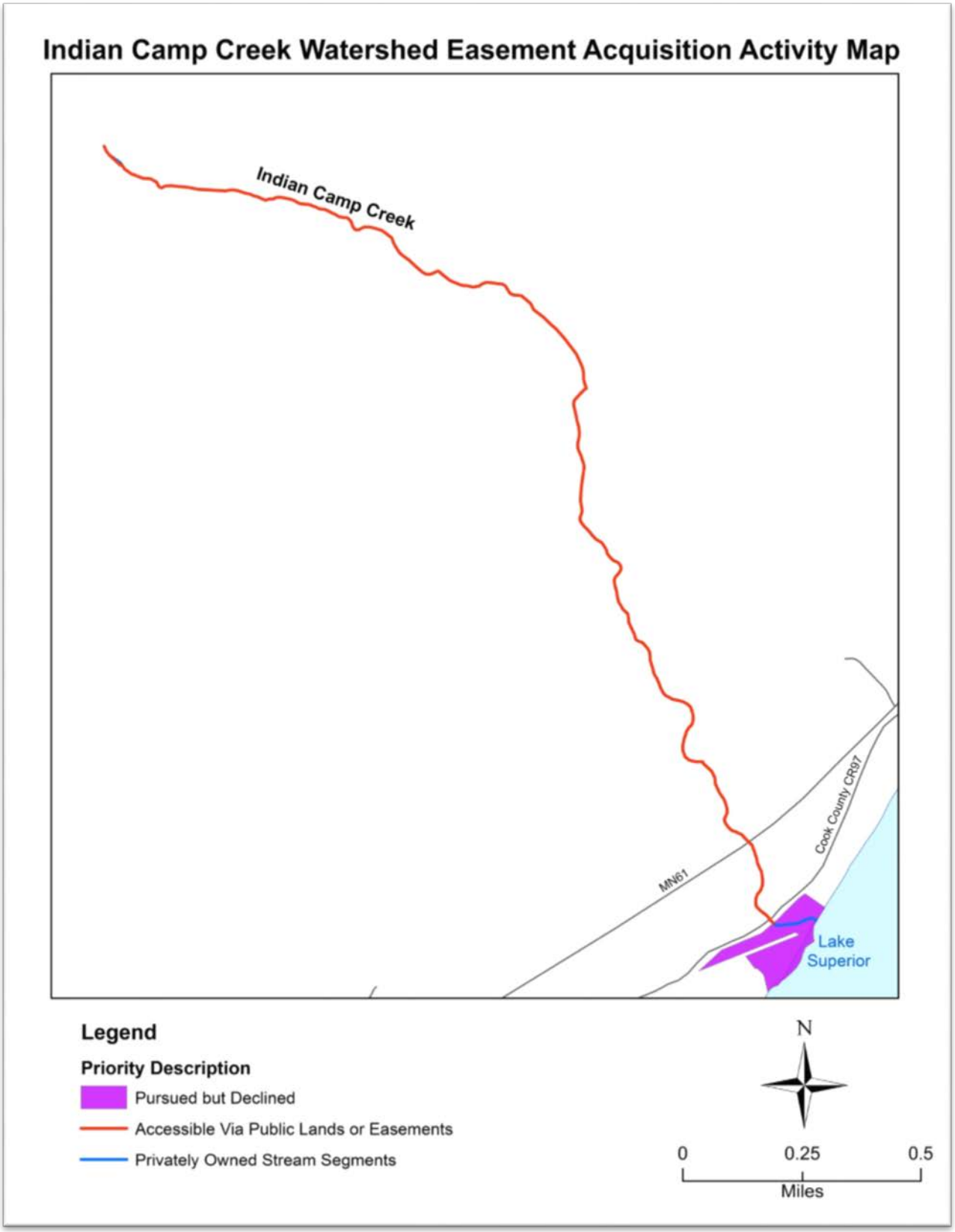

Encampment River Easement Acquisition Activity Map
Lake County T20
Lake County T22
Lake County T24
Lake County CSAH2
Encampment River
Lake County T23
Lake County T21
Lake County CSAH3
Lake County T16
Lake County T14
Lake County T39
Lake County T12
Lake County CSAH24
Lake County CR301
MN61
Lake Superior
Legend
Accessible Via Public Lands or Easements
Privately Owned Stream Segments
Priority Description
Priority 1
Priority 2
Priority 3
N
0
0.5
1
Miles

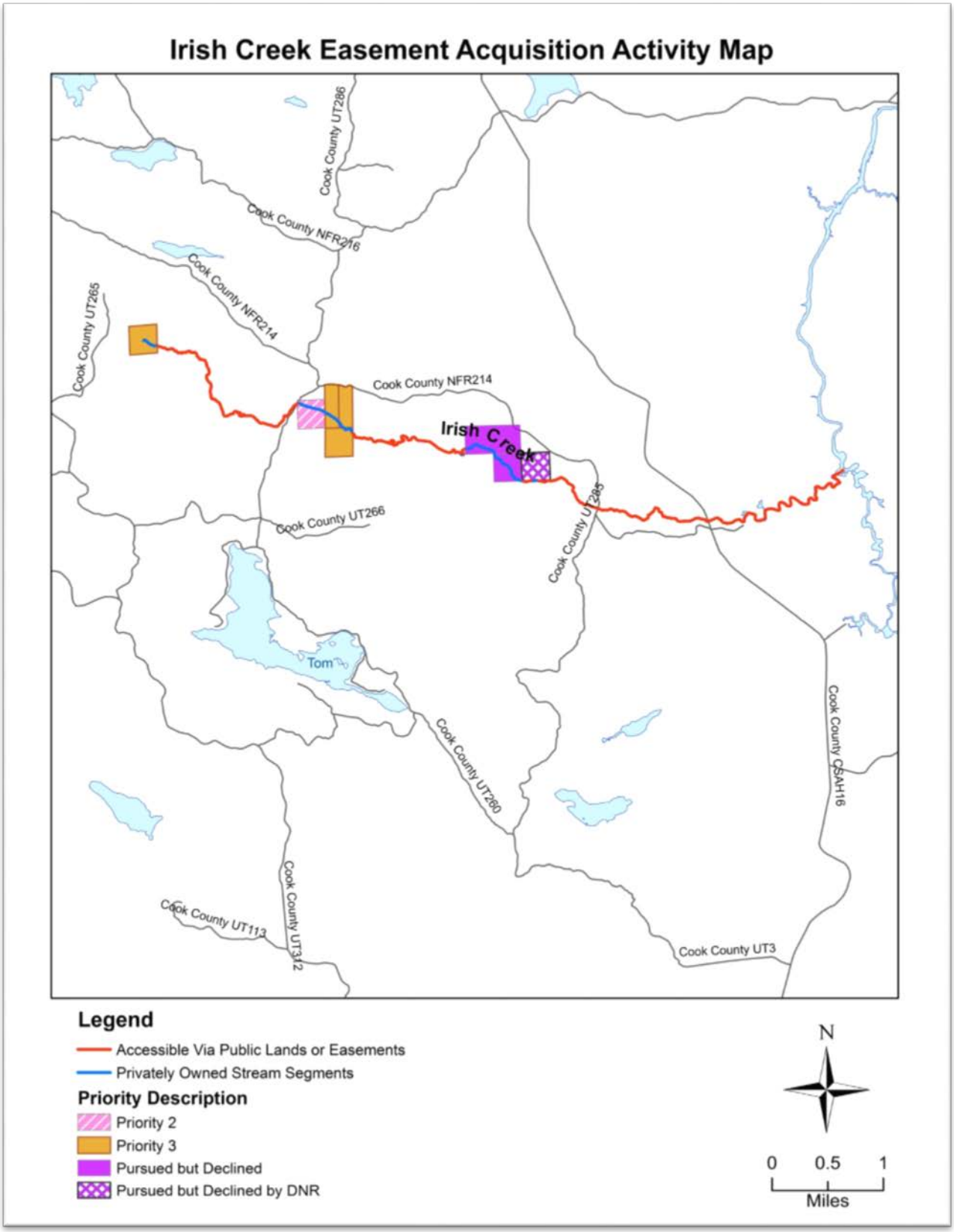

Flute Reed River Easement Acquisition Activity Map
Flute ReedRiver
Cook County UT260
Cook County UT312
Cook County UT3
Cook County CSAH16
Cook County CR78
Cook County UT78
Cook County CR69
MN61
Cook County CR63
Lake Superior
Legend
Priority Description
Priority 2
Priority 3
Pursued But Declined
Accessible Via Public Lands or Easements
Privately Owned Stream Segments
N
0
0.5
1
Miles

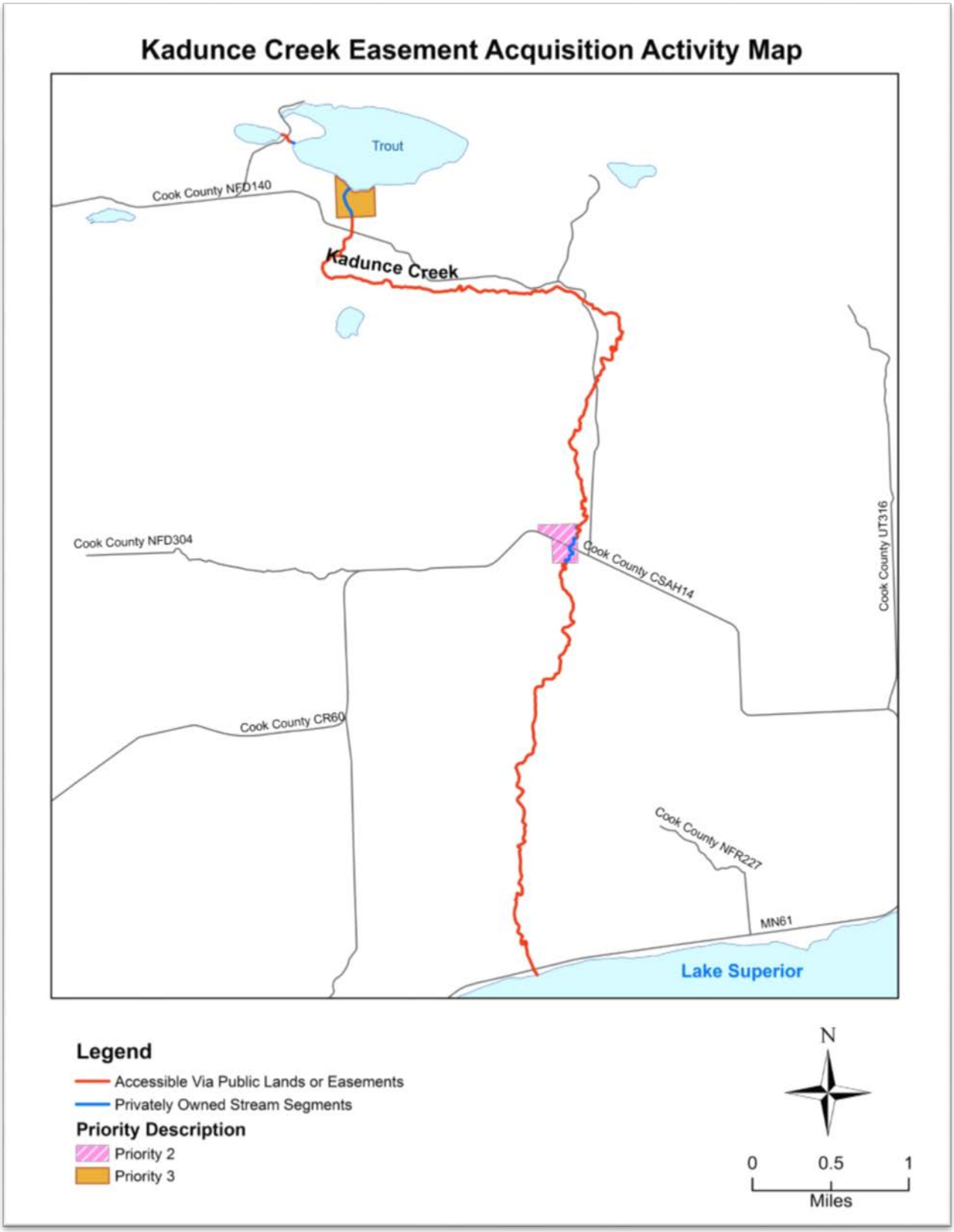
French River Watershed Easement Acquisition Activity Map

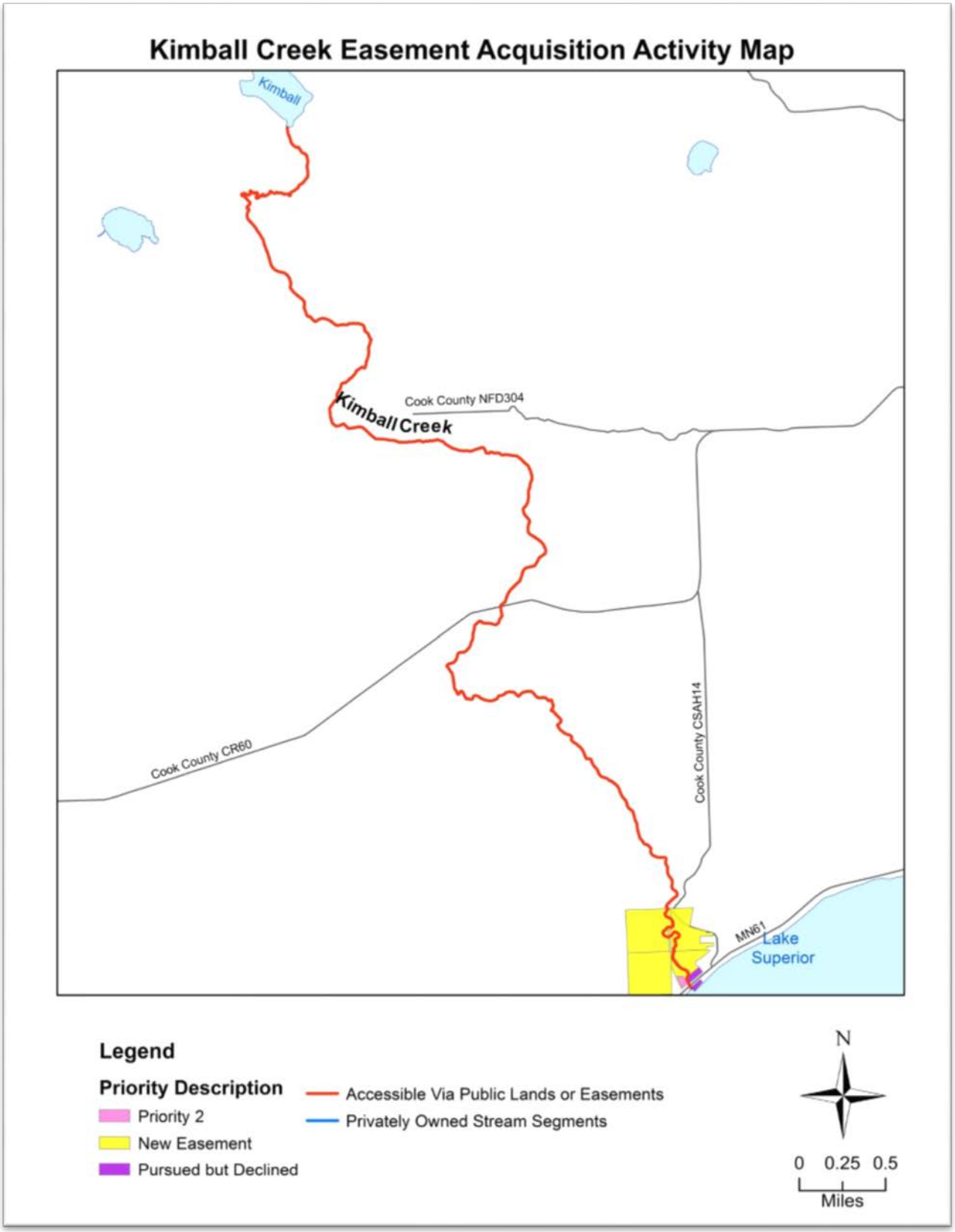


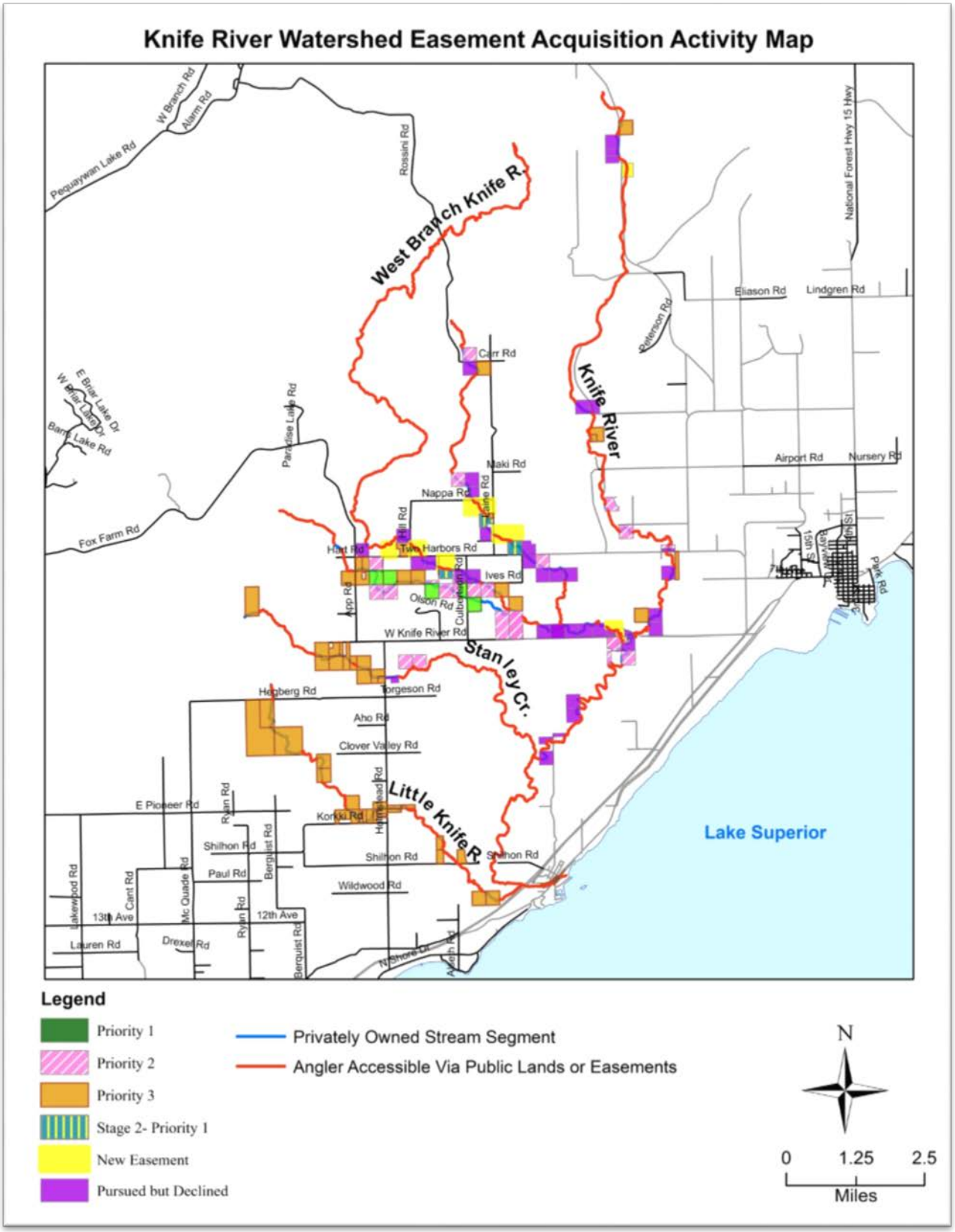

Gooseberry River Watershed Easement Acquisition Activity Map
Gooseberry River
Skunk Creek
Lake County T150
Lake County CSAH3
Lake County T32
Lake County T31
Lake County NFR2
Lake County T20
Lake County T28
Lake County T21
Lake County T24
MN61
Lake Superior
Legend
Priority Description
Priority 1
Priority 2
Priority 3
Landowner Interested - No Funding
Accessible Via Public Lands of Easement
Privately Owned Stream Segments
N
0
1
2
Miles


Indian Camp Creek Watershed Easement Acquisition Activity Map
Indian Camp Creek
MN61
Cook County CR97
Lake Superior
Legend
Priority Description
Pursued but Declined
Accessible Via Public Lands or Easements
Privately Owned Stream Segments
N
0
0.25
0.5
Miles

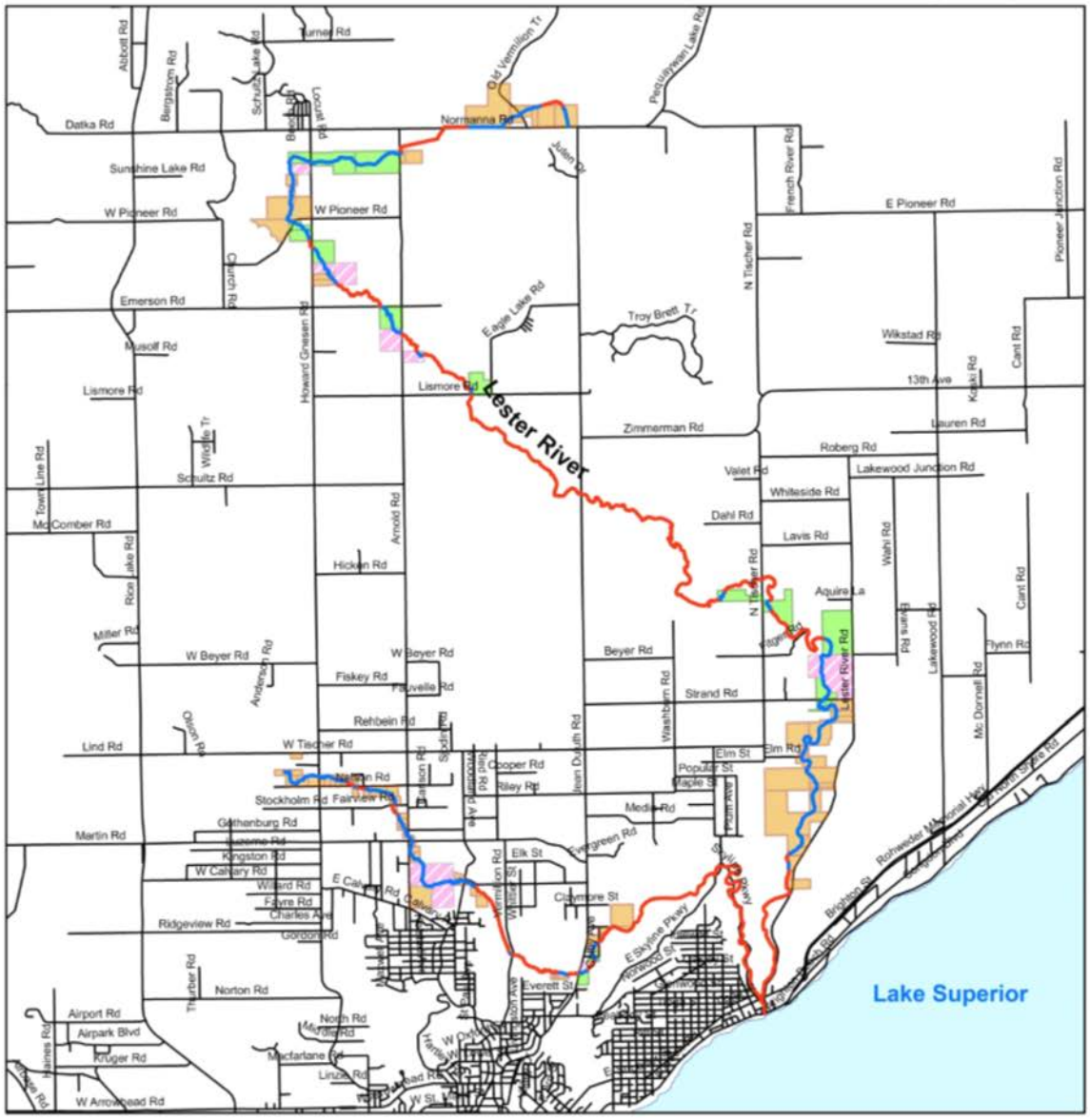

Irish Creek Easement Acquisition Activity Map
Cook County UT286
Cook County NFR216
Cook County NFR214
Cook County UT265
Cook County NFR214
Irish Creek
Cook County UT266
Cook County UT285
Tom
Cook County UT260
Cook County CSAH16
Cook County UT113
Cook County UT312
Cook County UT3
Legend
Accessible Via Public Lands or Easements
Privately Owned Stream Segments
Priority Description
Priority 2
Priority 3
Pursued but Declined
Pursued but Declined by DNR
N
0
0.5
1
Miles


Kadunce Creek Easement Acquisition Activity Map
Trout
Cook County NFD140
Kadunce Creek
Cook County NFD304
Cook County CSAH14
Cook County UT316
Cook County CR60
Cook County NFR227
MN61
Lake Superior
Legend
Accessible Via Public Lands or Easements
Privately Owned Stream Segments
Priority Description
Priority 2
Priority 3
N
0
0.5
1
Miles

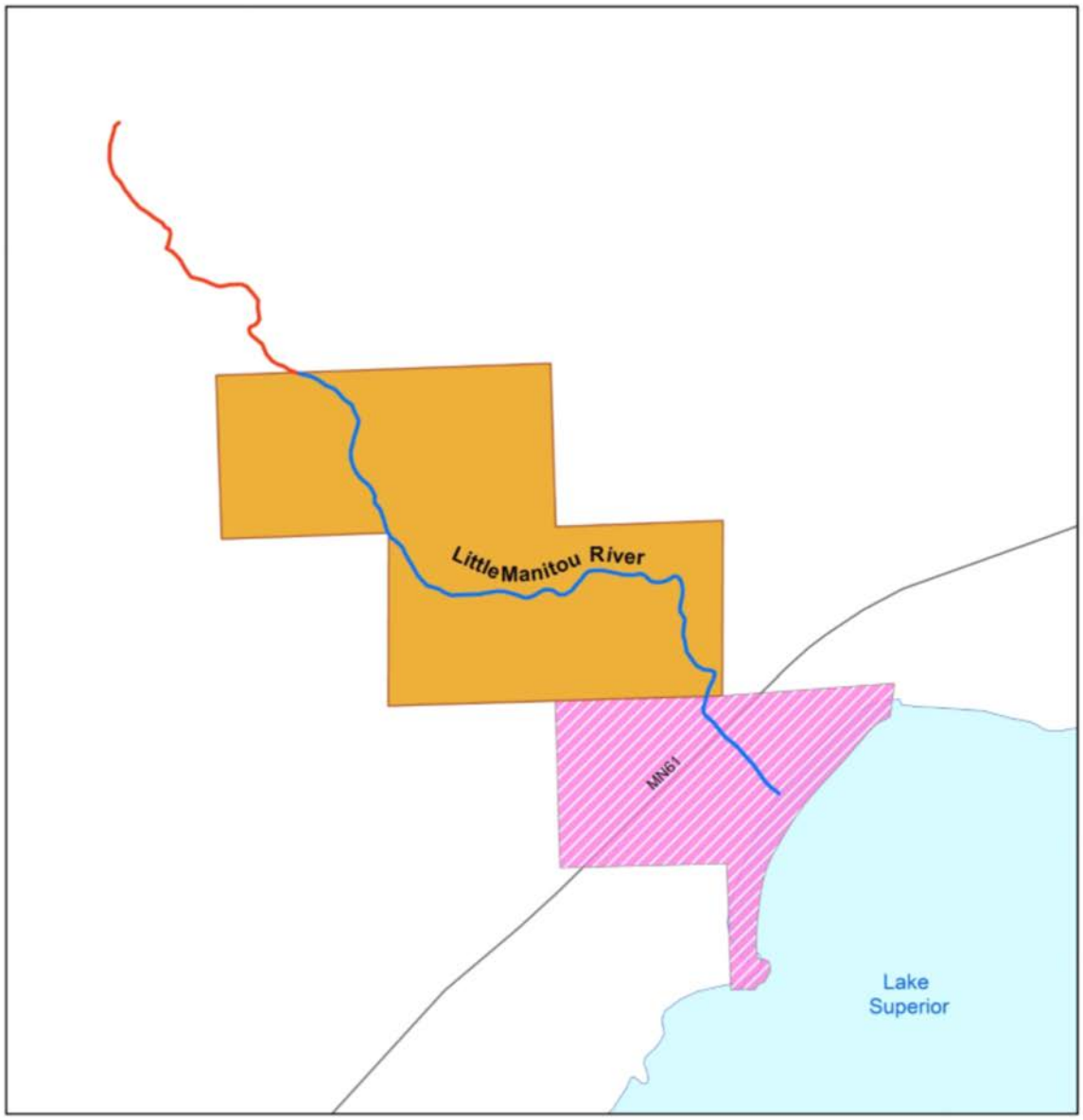

Kimball Creek Easement Acquisition Activity Map
Kimball
Kimball Creek
Cook County NFD304
Cook County CR60
Cook County CSAH14
MN61
Lake Superior
Legend
Priority Description
Priority 2
New Easement
Pursued but Declined
Accessible Via Public Lands or Easements
Privately Owned Stream Segments
N
0 0.25 0.5
Miles


Knife River Watershed Easement Acquisition Activity Map
West Branch Knife R.
Knife River
Stanley Cr.
Little Knife R.
Lake Superior
W Branch Rd
Alarm Rd
Pequaywan Lake Rd
Rossini Rd
National Forest Hwy 15 Hwy
Eliason Rd
Lindgren Rd
Peterson Rd
Carr Rd
E Briar Lake Dr
W Briar Lake Dr
Briar Lake Rd
Paradise Lake Rd
Maki Rd
Airport Rd
Nursery Rd
Nappa Rd
Fox Farm Rd
Hill Rd
Hunt Rd
Twin Harbors Rd
Ives Rd
Olson Rd
Culbertson Rd
W Knife River Rd
Hedgberg Rd
Torgeson Rd
Aho Rd
Clover Valley Rd
E Pioneer Rd
Ryan Rd
Korkki Rd
Shilhon Rd
Bergquist Rd
Paul Rd
Wildwood Rd
Lakewood Rd
Cant Rd
Mc Quade Rd
13th Ave
12th Ave
Lauren Rd
Drexel Rd
Nesmore Dr
Legend
Priority 1
Priority 2
Priority 3
Stage 2- Priority 1
New Easement
Pursued but Declined
Privately Owned Stream Segment
Angler Accessible Via Public Lands or Easements
N
0
1.25
2.5
Miles

Lester River Watershed Easement Acquisition Activity Map



Little Manitou River Easement Acquisition Activity Map



Legend

Priority Description

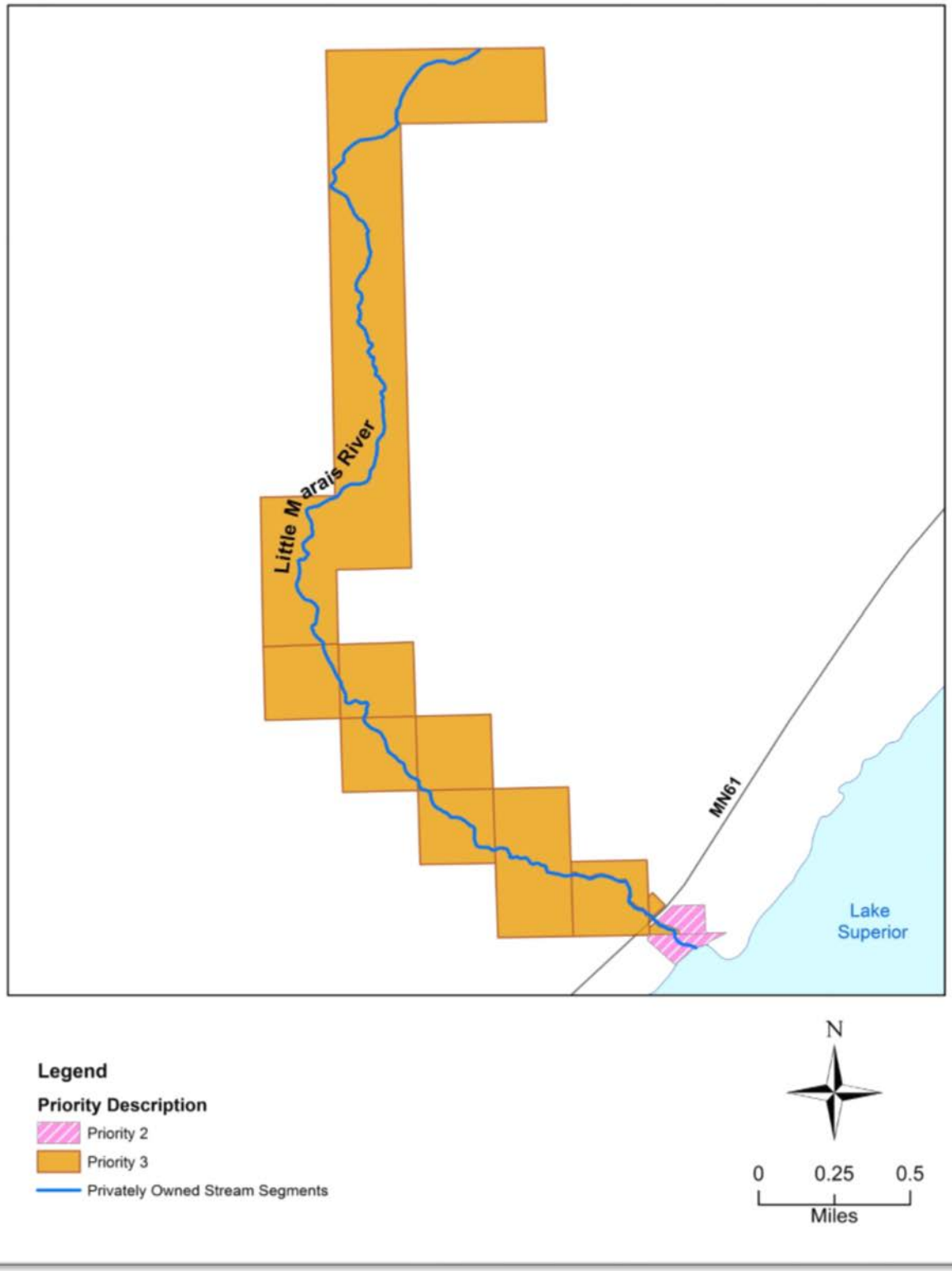
- Priority 2
- Priority 3
- Privately Owned Stream Segments
- Accessible Via Public Lands or Easements

N

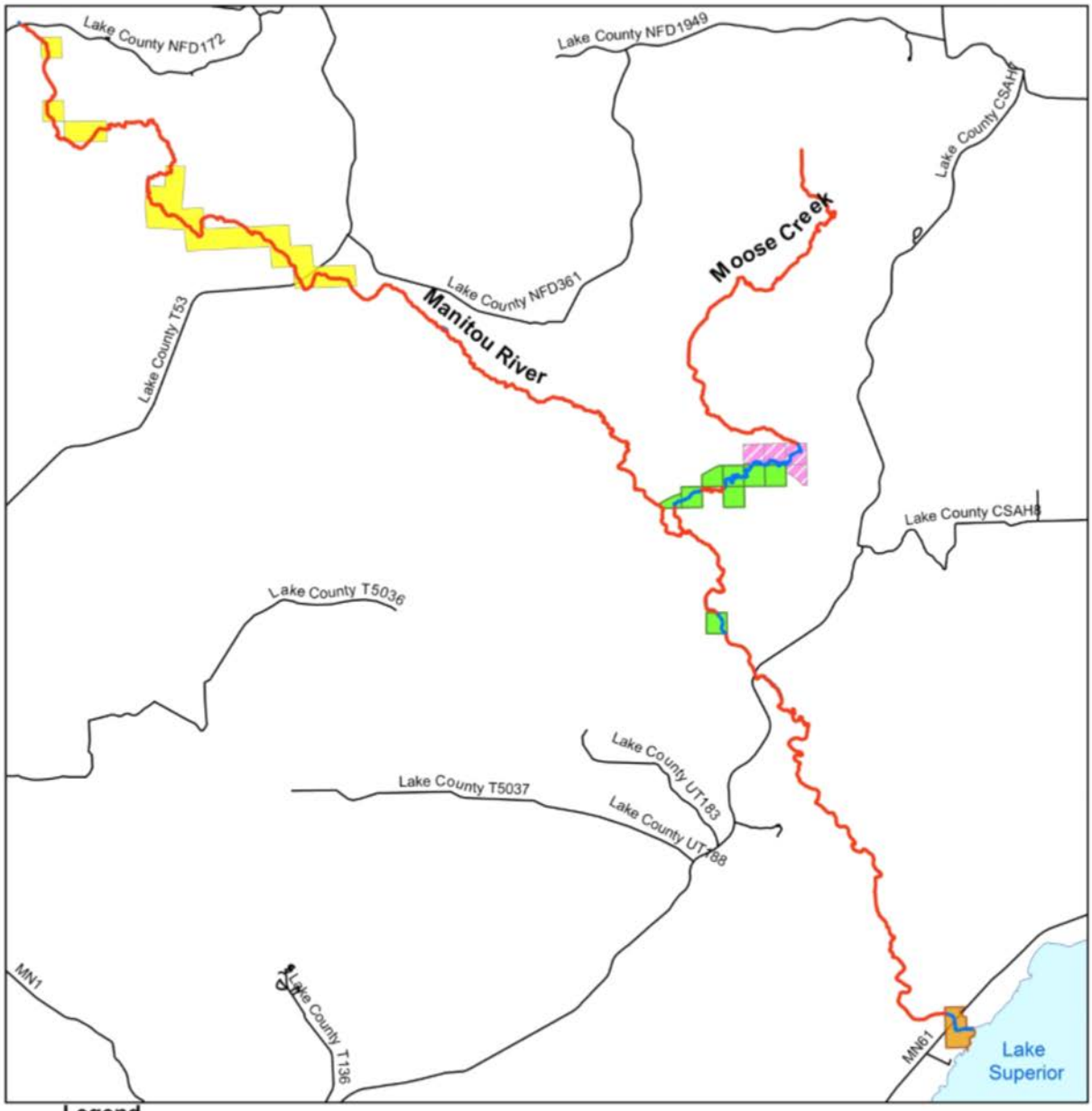
0 0.25 0.5

Miles

Little Marais River Easement Acquisition Activity Map



Manitou River Watershed Easement Acquisition Activity Map



Legend

Priority Description

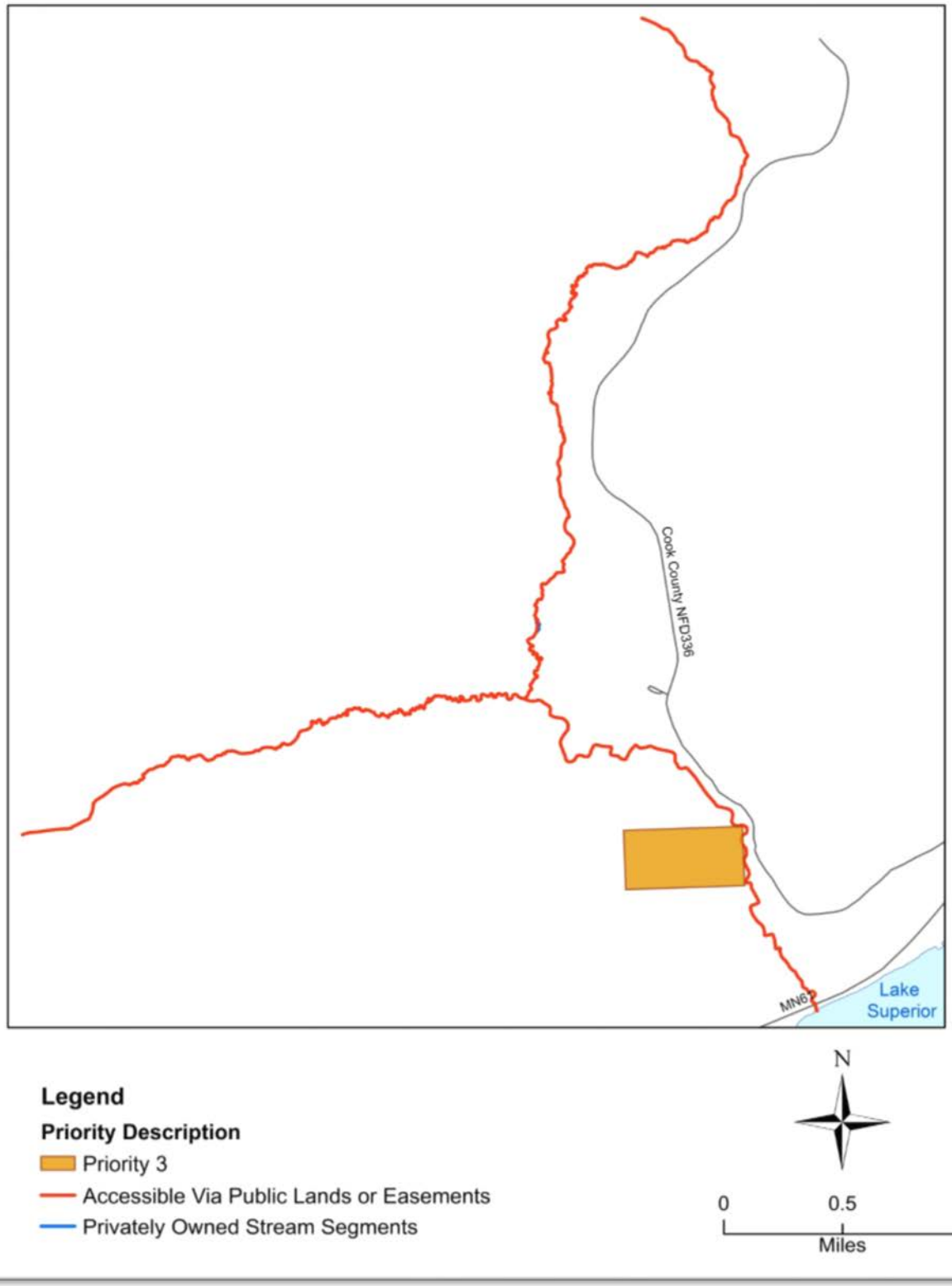
- Priority 1
- Priority 2
- Priority 3
- New Easement
- Accessible Via Public Lands or Easements
- Privately Owned Stream Segments

N

0 1 2

Miles

Onion River Watershed Easement Acquisition Activity Map

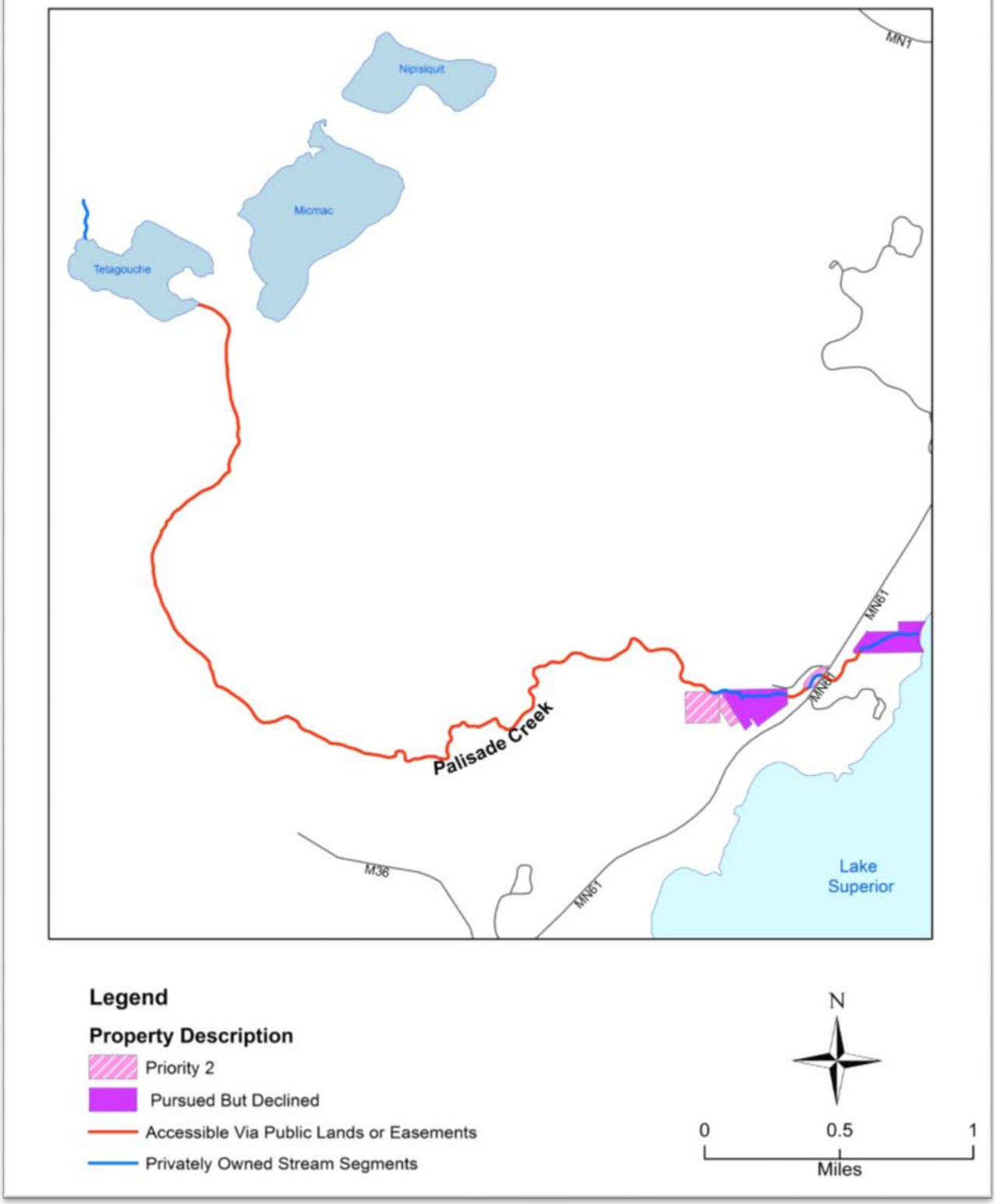


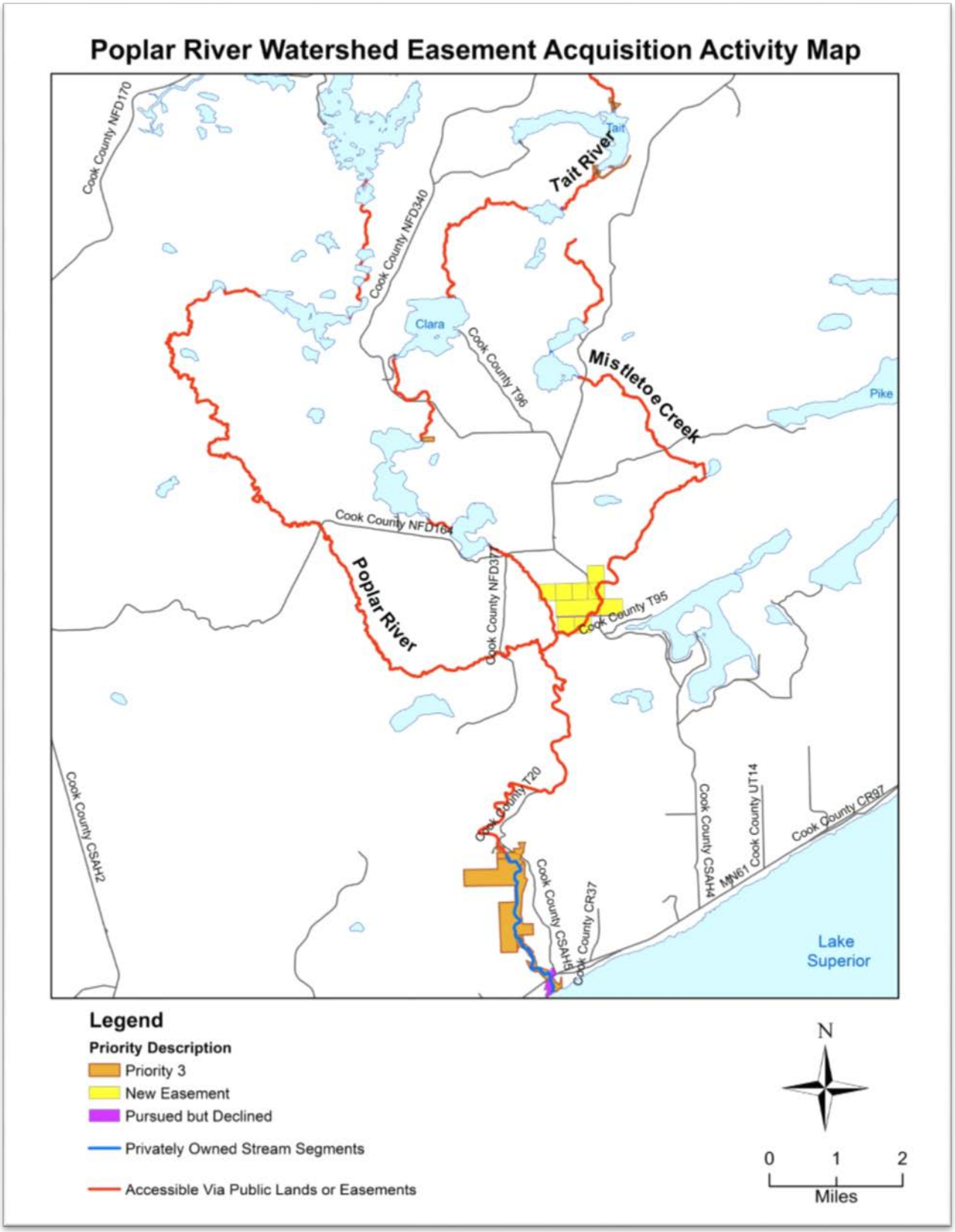
Legend

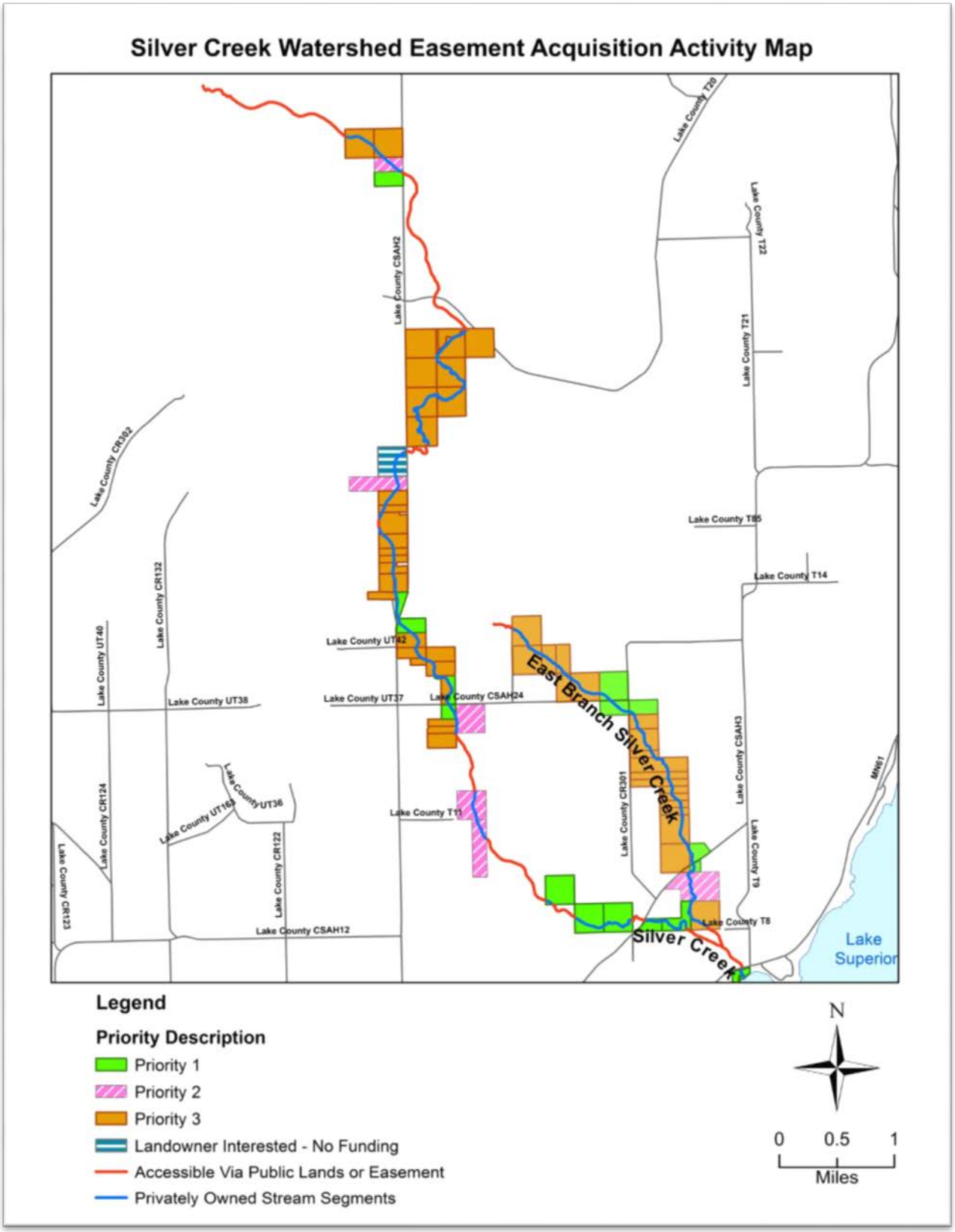
Priority Description

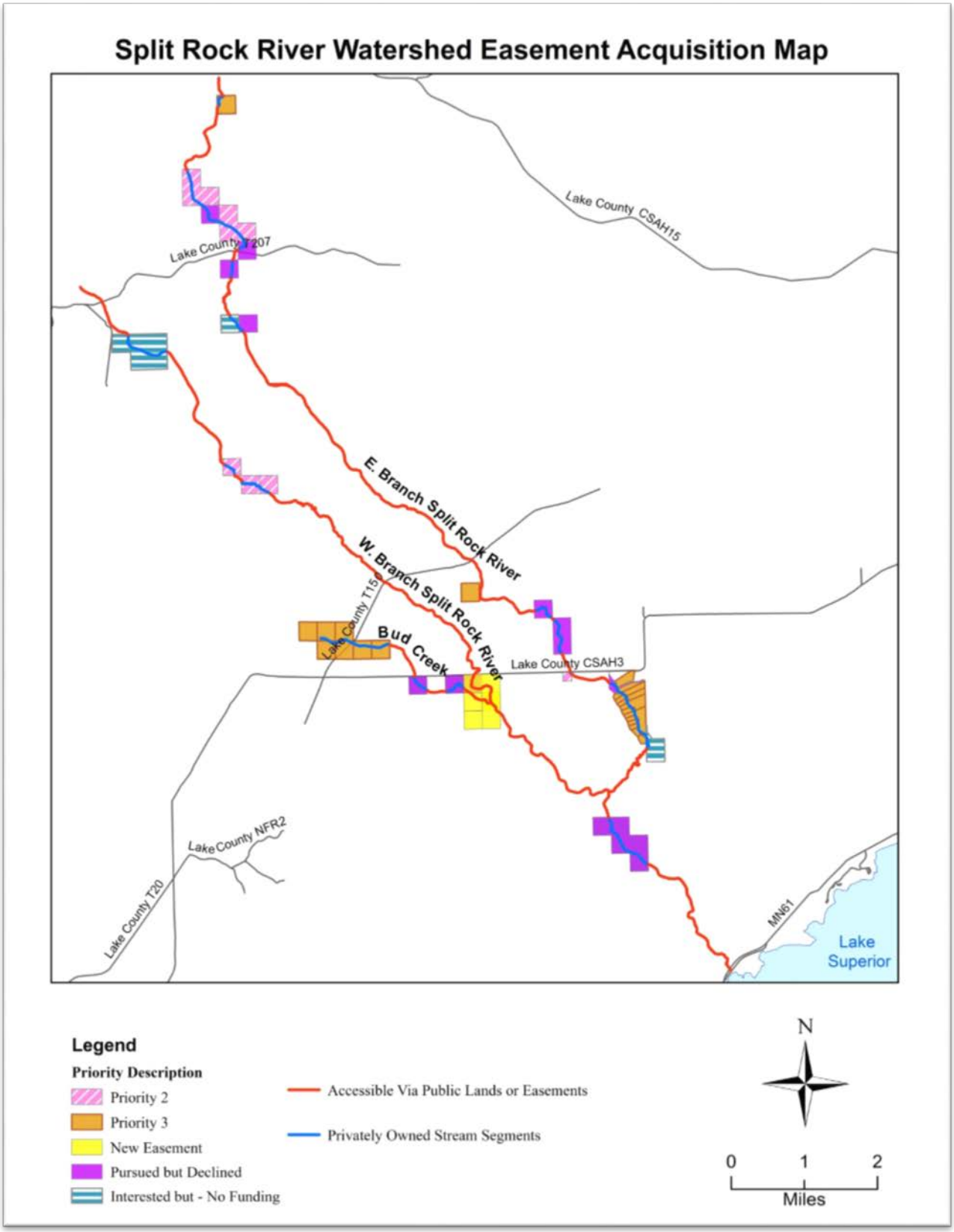
- Priority 3
- Accessible Via Public Lands or Easements
- Privately Owned Stream Segments

Palisade Creek Watershed Easement Acquisition Activity Map

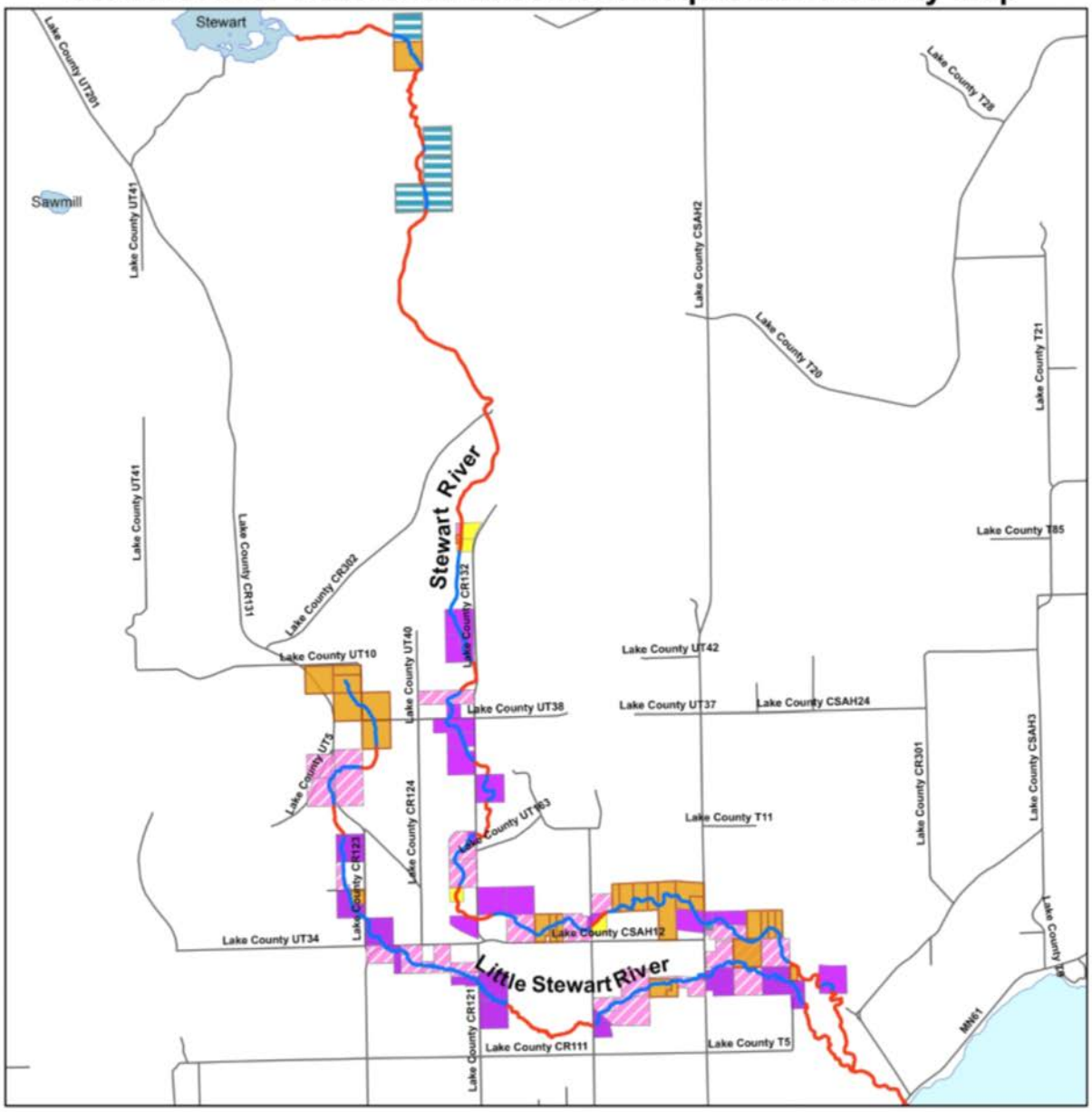



Poplar River Watershed Easement Acquisition Activity Map
Cook County NFD170
Tait
Tait River
Cook County NFD340
Clara
Cook County T96
Mistletoe Creek
Pike
Cook County NFD164
Poplar River
Cook County NFD37
Cook County T95
Cook County T20
Cook County CSAH2
Cook County CSAH5
Cook County CR37
Cook County CSAH4
MN61 Cook County UT14
Cook County CR97
Lake Superior
Legend
Priority Description
Priority 3
New Easement
Pursued but Declined
Privately Owned Stream Segments
Accessible Via Public Lands or Easements
N
0
1
2
Miles


Silver Creek Watershed Easement Acquisition Activity Map
Lake County T20
Lake County T22
Lake County CSAH2
Lake County T21
Lake County CR302
Lake County T85
Lake County T14
Lake County CR132
Lake County UT40
Lake County UT42
Lake County UT38
Lake County UT37
Lake County CSAH24
East Branch Silver Creek
Lake County CSAH3
MN61
Lake County UT36
Lake County UT16
Lake County T11
Lake County CR124
Lake County CR301
Lake County T9
Lake County CR122
Lake County CR123
Lake County T8
Lake County CSAH12
Silver Creek
Lake Superior
Legend
Priority Description
Priority 1
Priority 2
Priority 3
Landowner Interested - No Funding
Accessible Via Public Lands or Easement
Privately Owned Stream Segments
N
0
0.5
1
Miles


Split Rock River Watershed Easement Acquisition Map
Lake County CSAH15
Lake County T207
E. Branch Split Rock River
W. Branch Split Rock River
Lake County T15
Bud Creek
Lake County CSAH3
Lake County NFR2
Lake County T20
MN61
Lake Superior
Legend
Priority Description
Priority 2
Priority 3
New Easement
Pursued but Declined
Interested but - No Funding
Accessible Via Public Lands or Easements
Privately Owned Stream Segments
N
0
1
2
Miles

Stewart River Watershed Easement Acquisition Activity Map



Legend

Priority Description

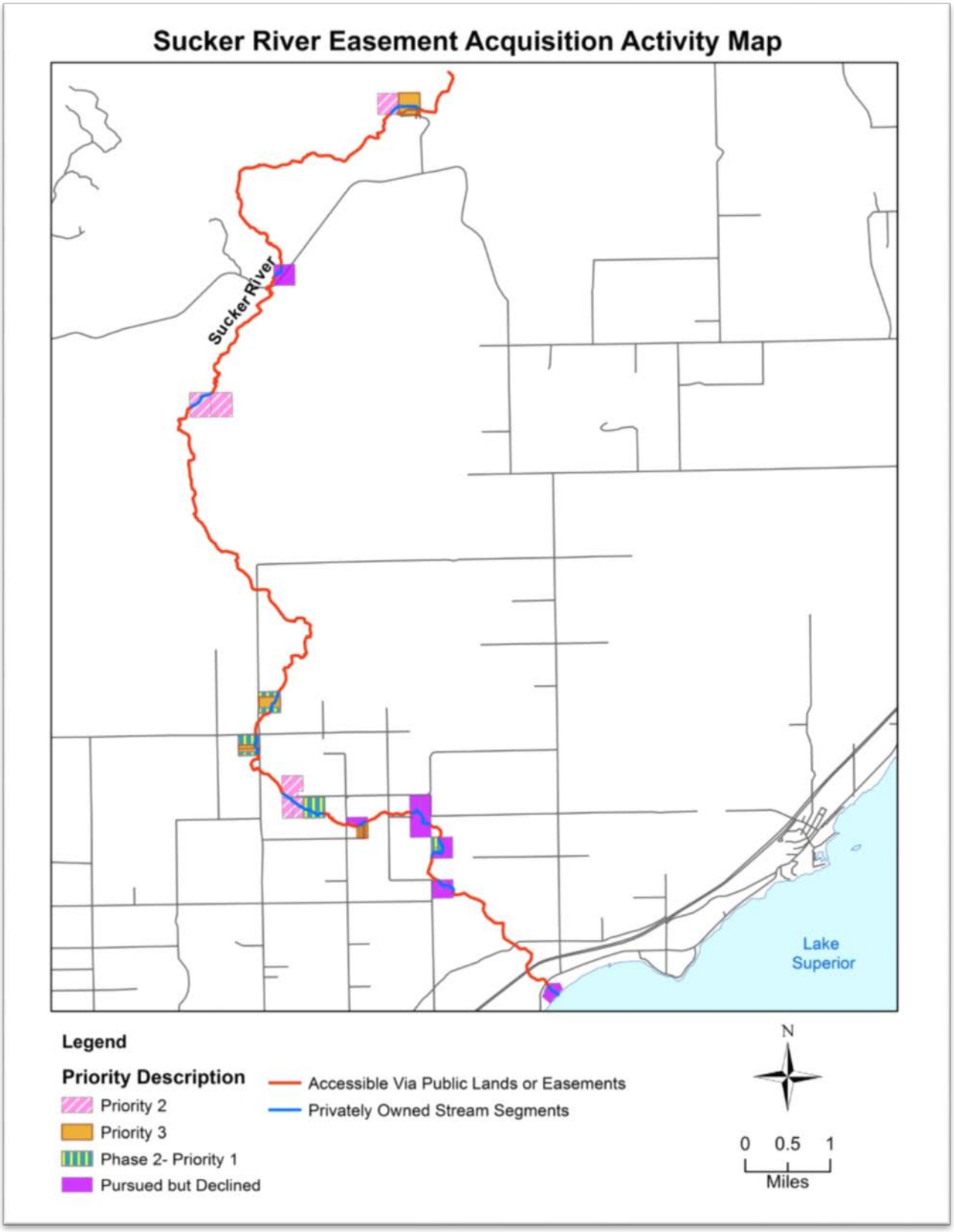
- Priority 2
- Priority 3
- Phase 2 - Priority 1
- New Easement
- Pursued but Declined
- Interested - No Funding

- Accessible Via Public Lands or Easements
- Privately Owned Stream Segments

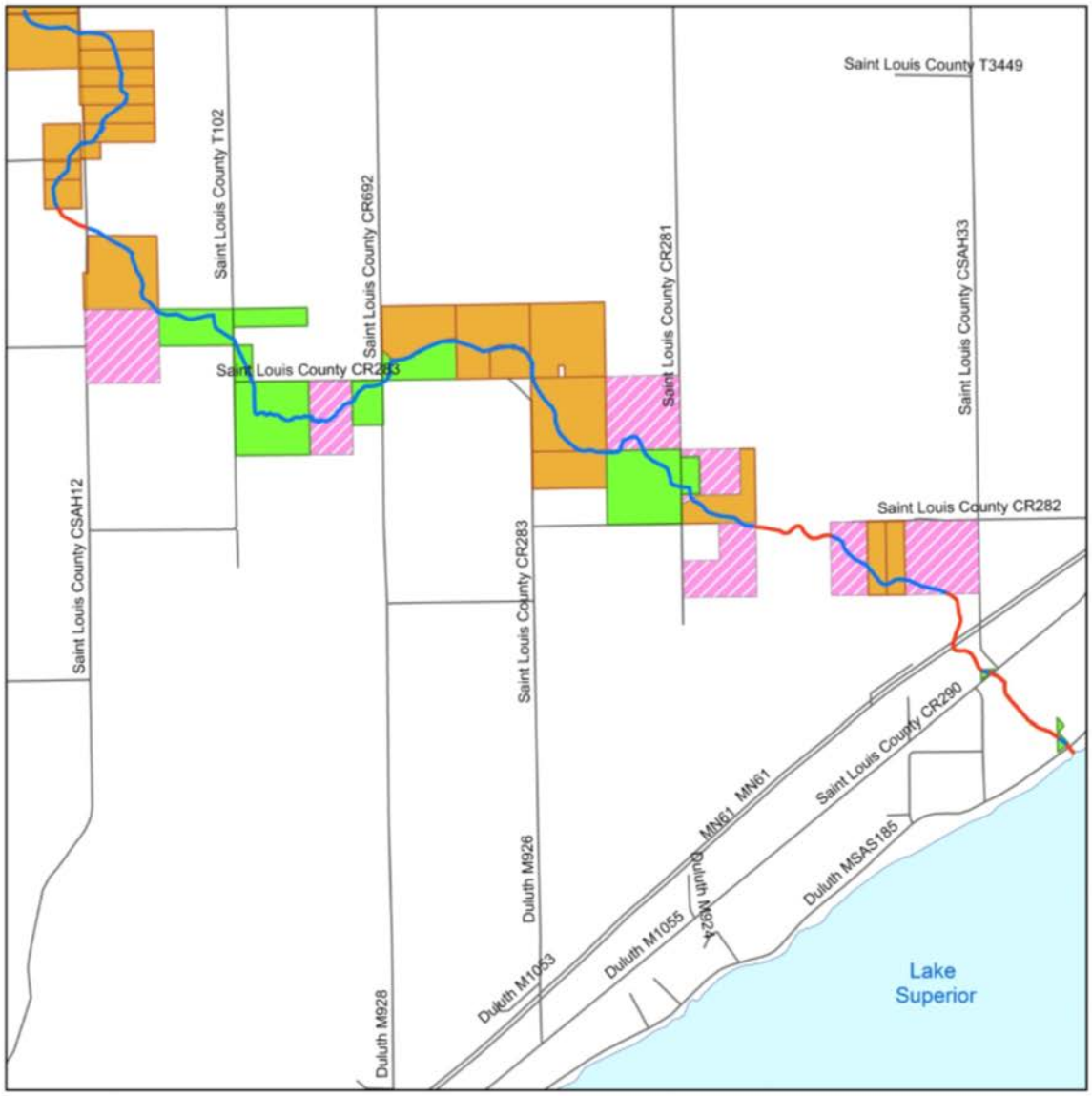
N

0 1 2

Miles


Sucker River Easement Acquisition Activity Map
Sucker River
Lake Superior
Legend
Priority Description
Priority 2
Priority 3
Phase 2- Priority 1
Pursued but Declined
Accessible Via Public Lands or Easements
Privately Owned Stream Segments
N
0 0.5 1
Miles

Talmadge River Easement Acquisition Activity Map



Legend

- Accessible Via Public Lands or Easement
- Privately Owned Stream Segment

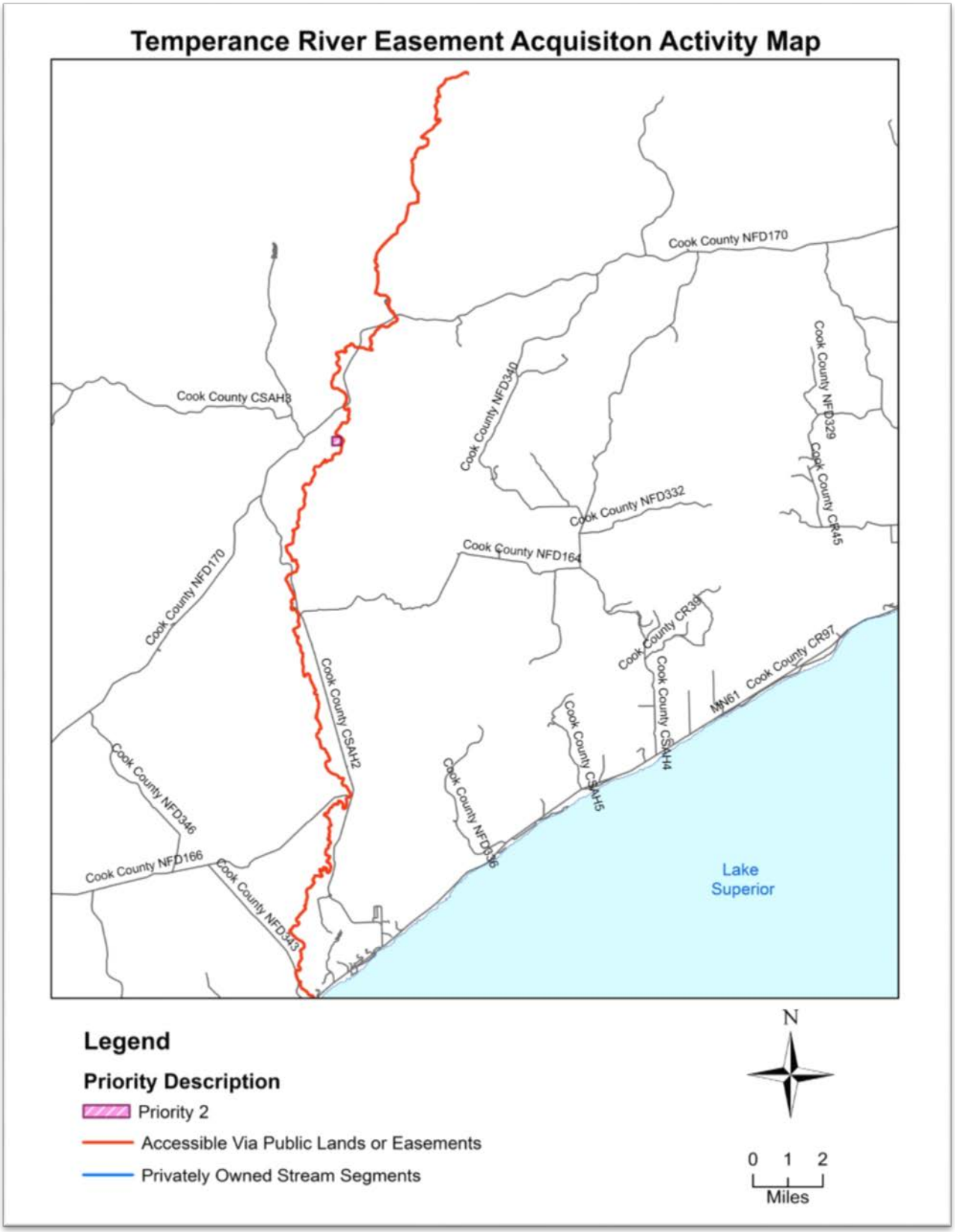
Priority Description

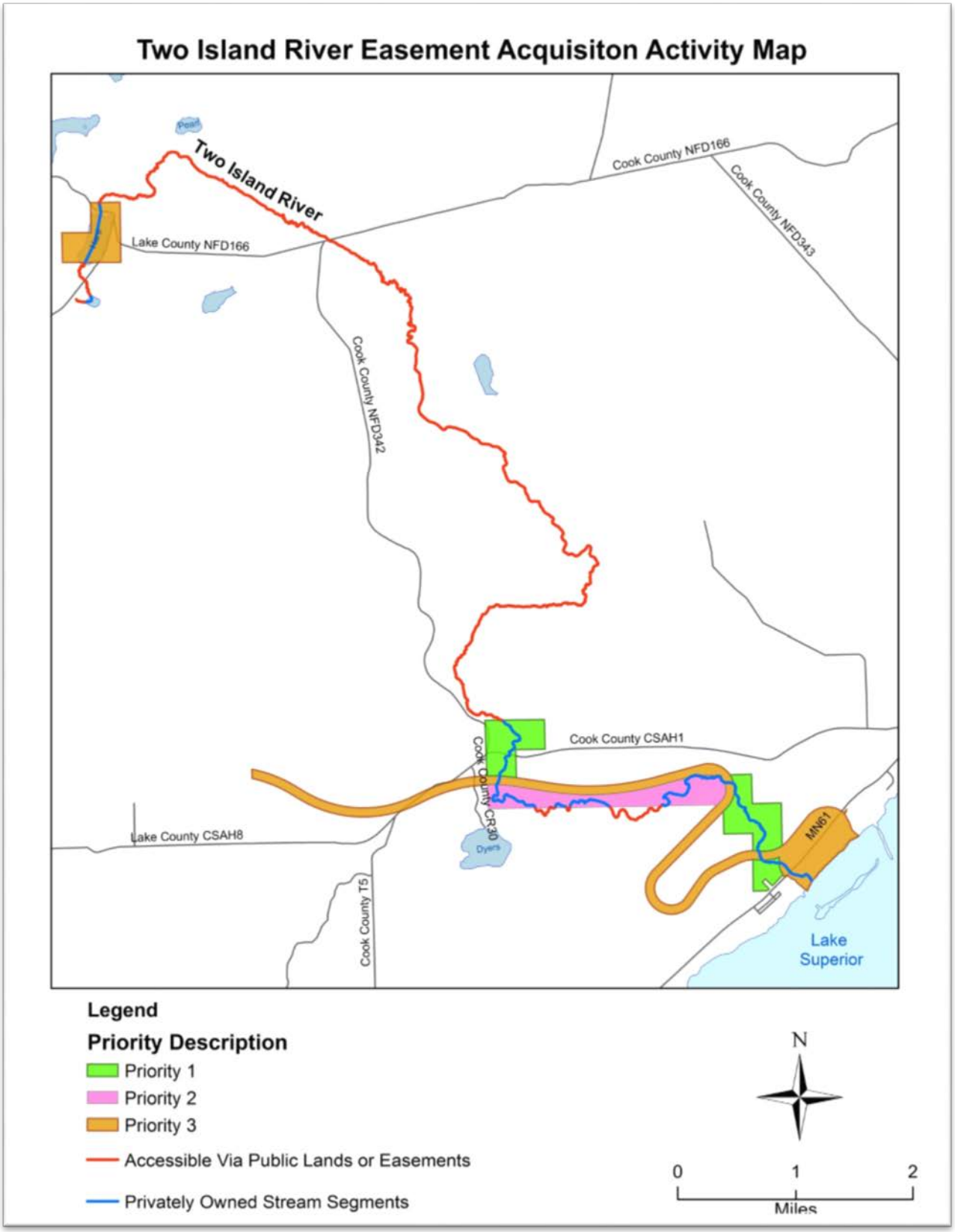
- Priority 1
- Priority 2
- Priority 3

N

0 0.5 1

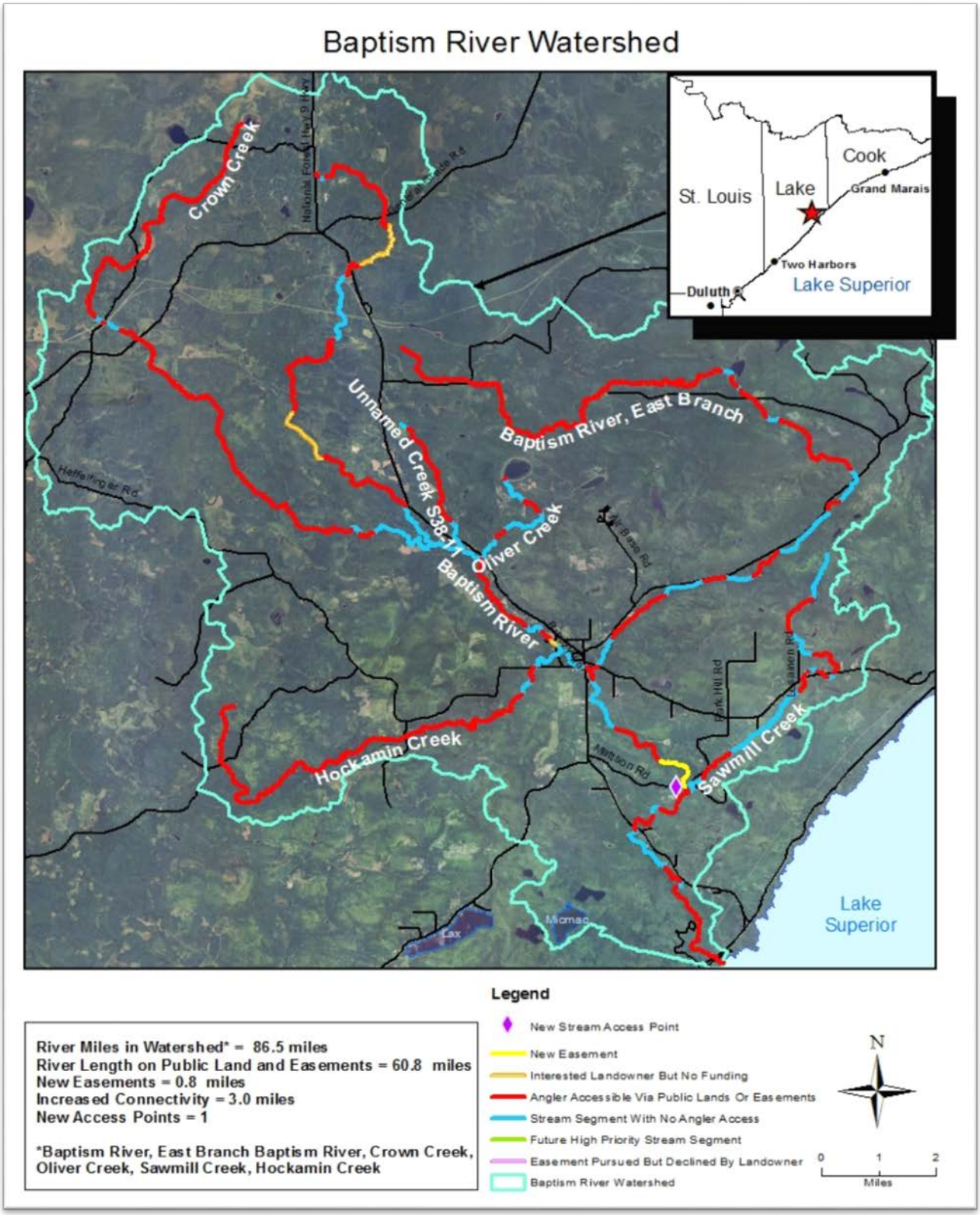
Miles


Temperance River Easement Acquisiton Activity Map
Cook County NFD170
Cook County CSAH3
Cook County NFD340
Cook County NFD329
Cook County CR45
Cook County NFD332
Cook County NFD164
Cook County NFD170
Cook County CR39
Cook County CR97
MN61
Cook County CSAH2
Cook County CSAH4
Cook County CSAH5
Cook County NFD346
Cook County NFD336
Cook County NFD166
Cook County NFD343
Lake Superior
Legend
Priority Description
Priority 2
Accessible Via Public Lands or Easements
Privately Owned Stream Segments
N
0 1 2
Miles

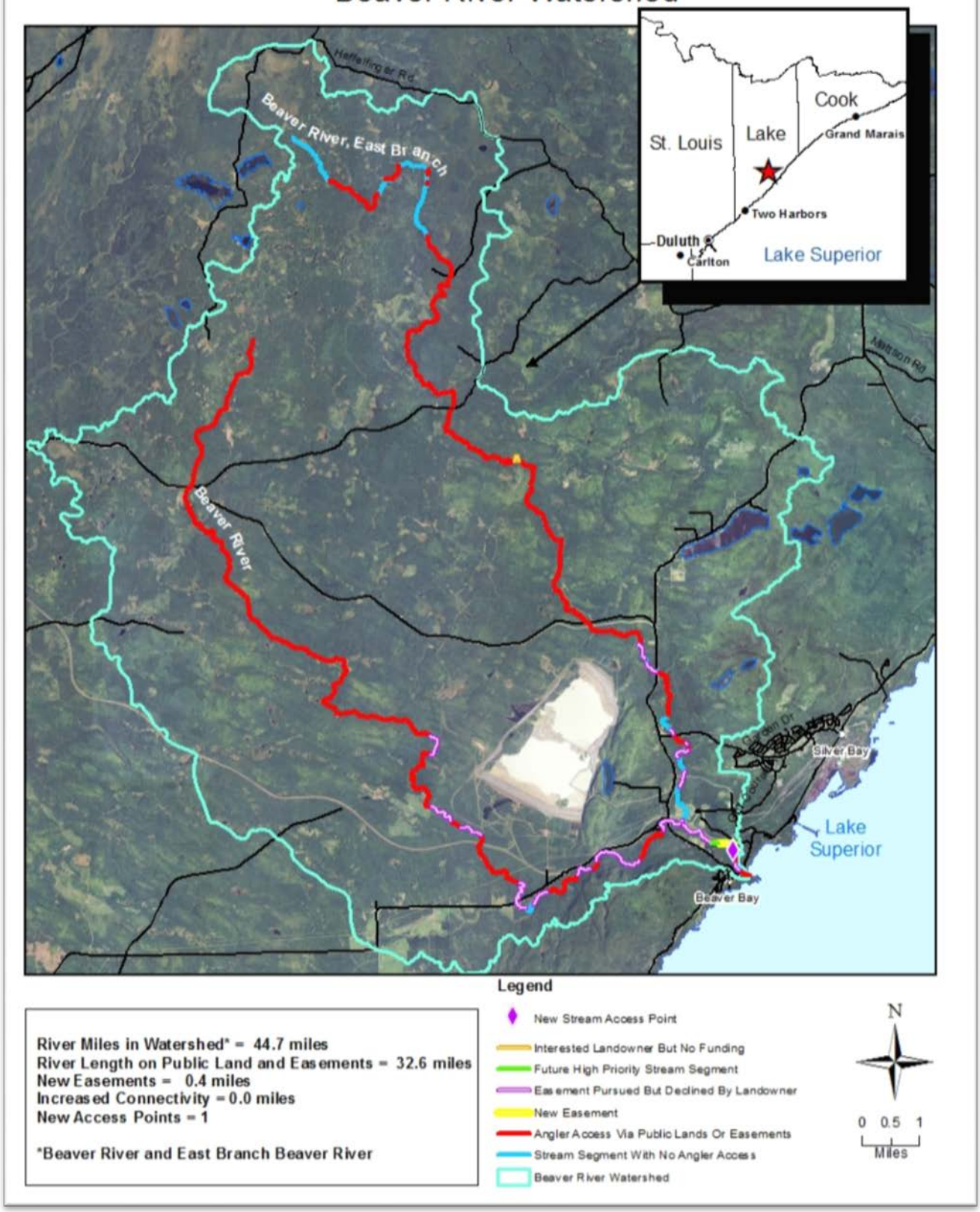

Two Island River Easement Acquisiton Activity Map
Two Island River
Cook County NFD166
Cook County NFD343
Lake County NFD166
Cook County NFD342
Cook County CSAH1
Cook County CR30
Lake County CSAH8
Cook County T5
MN61
Dyers
Lake Superior
Legend
Priority Description
Priority 1
Priority 2
Priority 3
Accessible Via Public Lands or Easements
Privately Owned Stream Segments
N
0
1
2
Miles

APPENDIX D

Atlas depicting potential easement activities by stream segment in 31 major North Shore watersheds for streams tributary to Lake Superior. Maps depict increased contiguous stream segments and additional angler access points created due to this project. They also reflect the need for addition funding to continue purchase of easements from willing landowners. Watersheds are listed in alphabetical order.



Beaver River Watershed



River Miles in Watershed* = 44.7 miles
River Length on Public Land and Easements = 32.6 miles
New Easements = 0.4 miles
Increased Connectivity = 0.0 miles
New Access Points = 1

*Beaver River and East Branch Beaver River

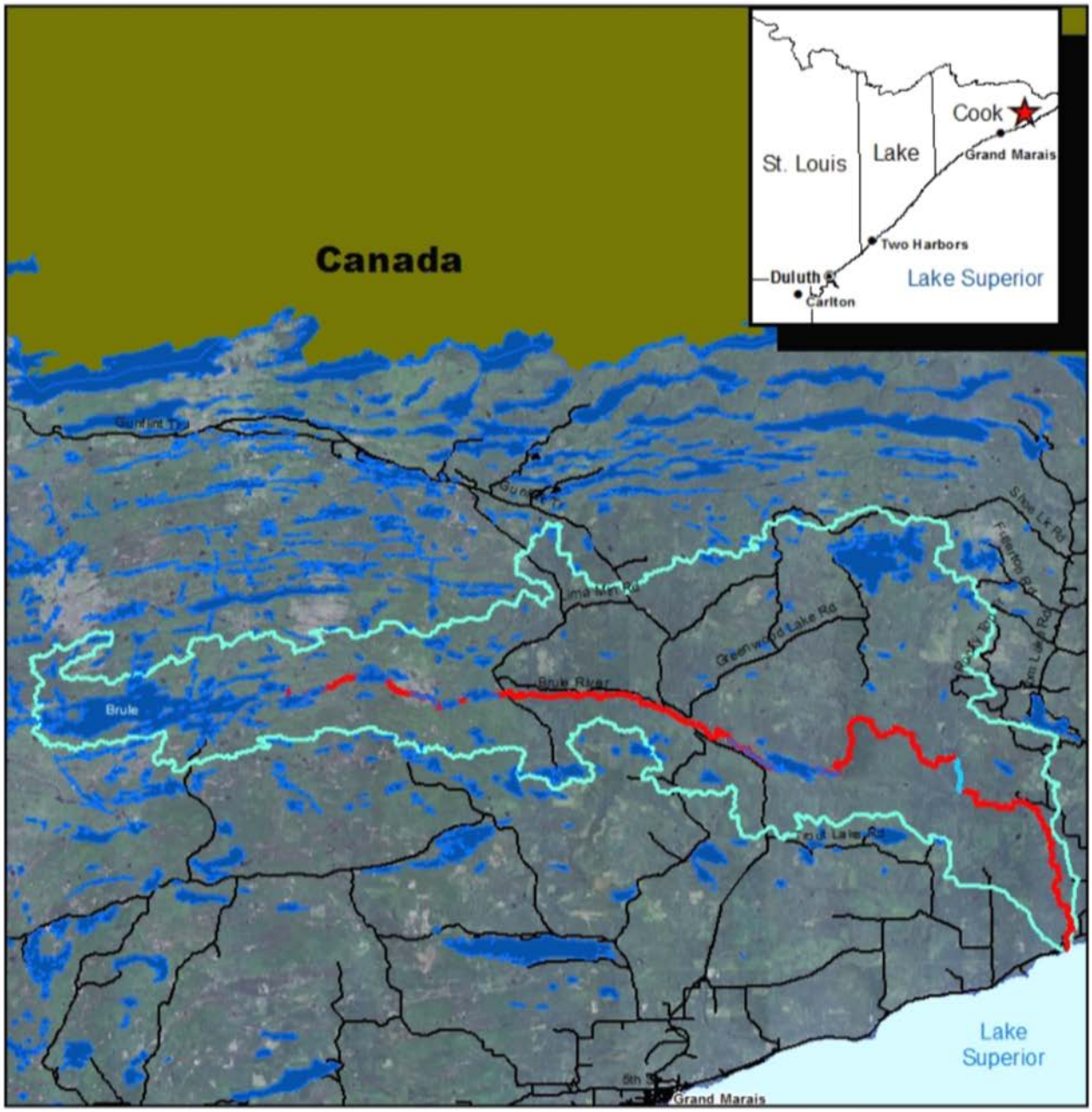
Legend

- New Stream Access Point
- Interested Landowner But No Funding
- Future High Priority Stream Segment
- Easement Pursued But Declined By Landowner
- New Easement
- Angler Access Via Public Lands Or Easements
- Stream Segment With No Angler Access
- Beaver River Watershed

N

0 0.5 1
Miles

Brule River Watershed



River Miles in Watershed* = 39.7 miles
River Length on Public Land and Easements = 38.4 miles

* Brule River

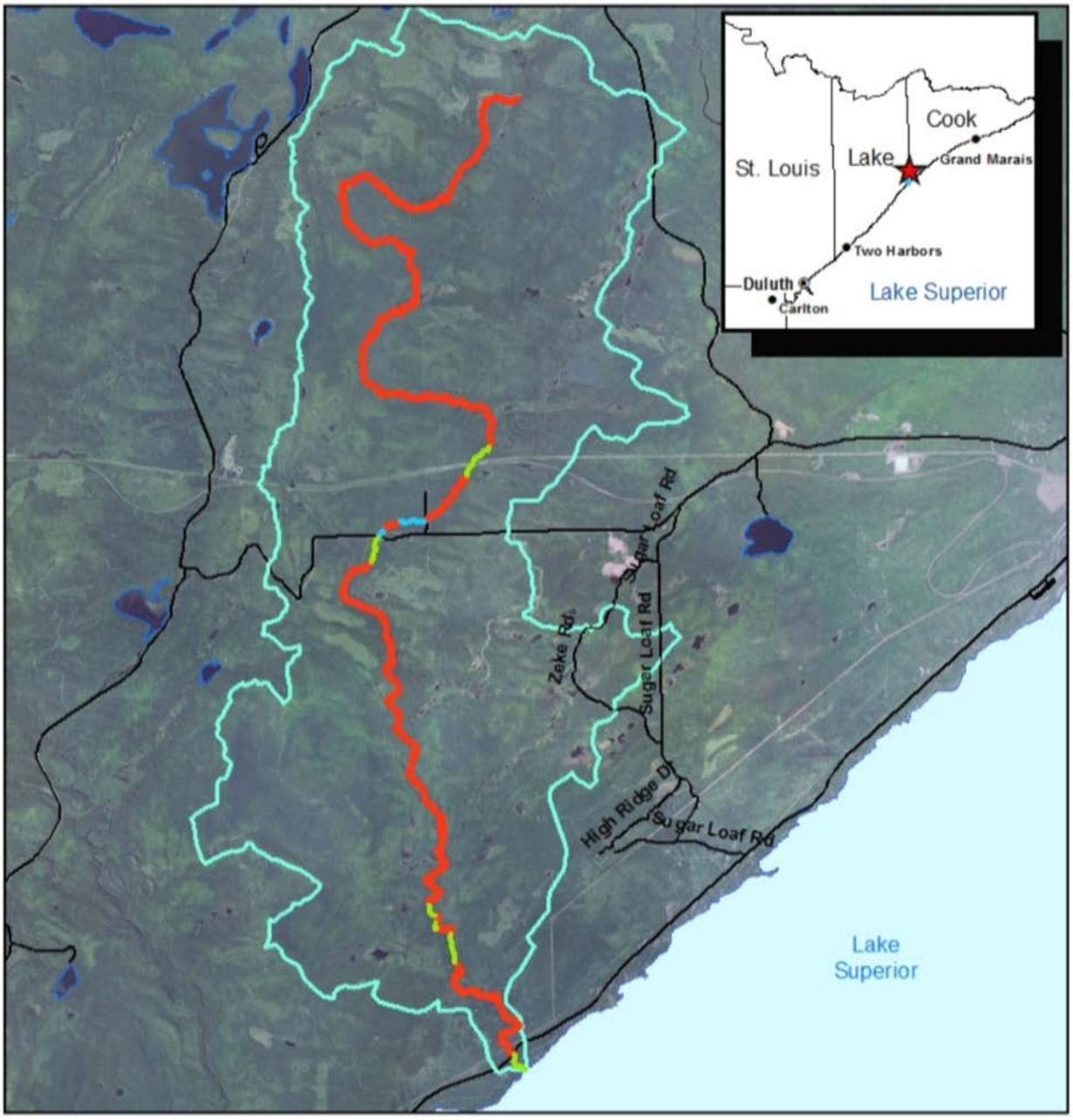
Legend

- Angler Accessible Via Public Lands Or Easements
- Stream Segment With No Angler Access
- Brule River Watershed

N

0 2.5 5
Miles

Caribou River Watershed



River Miles in Watershed* = 15.0 miles
River Length on Public Land and Easements = 13.4 miles

*Caribou River

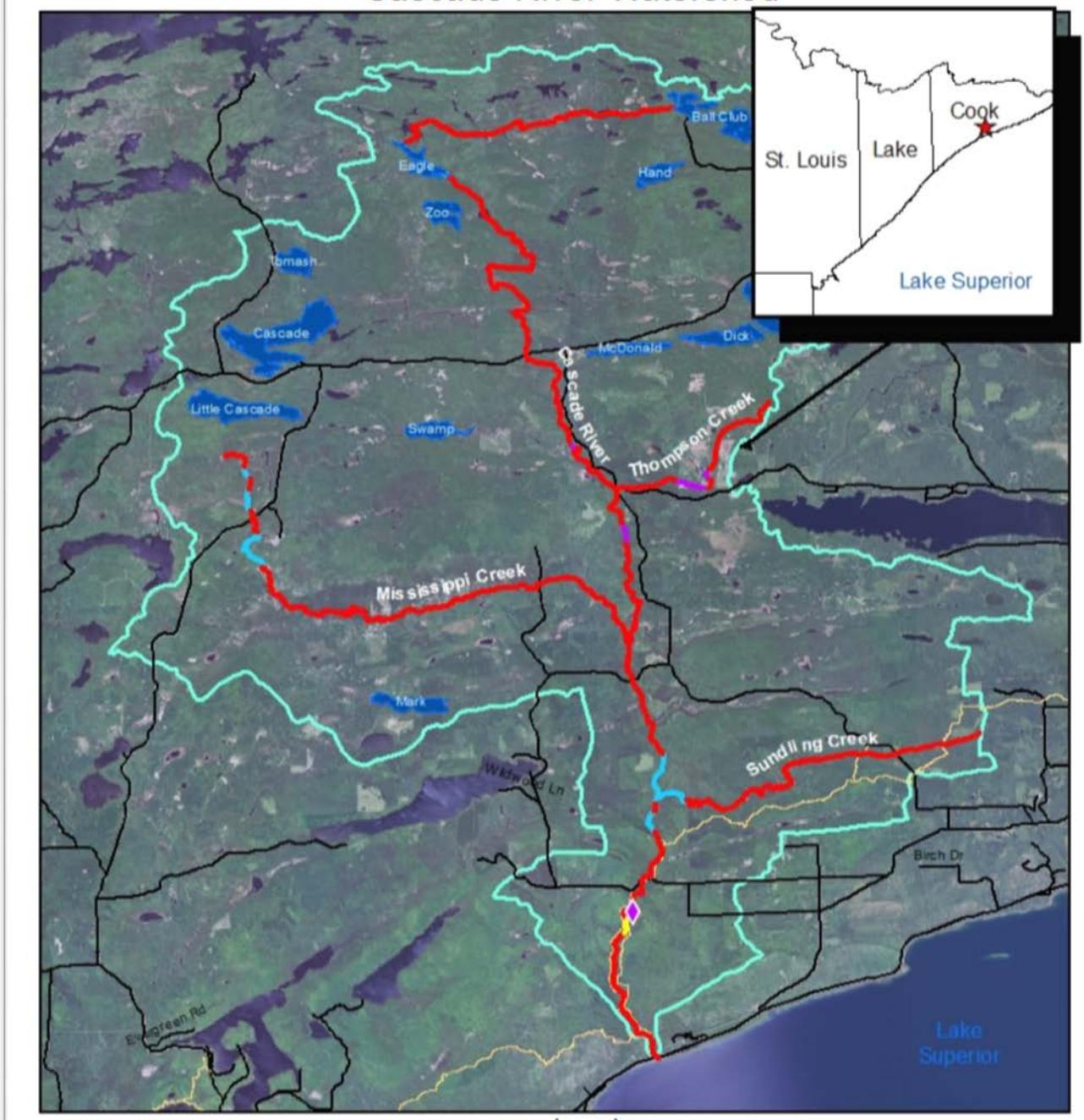
Legend

- Future High Priority Stream Segment
- Angler Access Via Public Lands or Easements
- Stream Segment With No Angler Access
- Caribou River Watershed

N

0 0.5 1
Miles

Cascade River Watershed



River Miles in Watershed* = 45.7 miles
River Length on Public Land and Easements = 40.6 miles
New Easements = 0.2 miles
Increased Connectivity = 4.5 miles
New Access Points = 1

*Cascade River, Sundling Creek, Mississippi Creek and Thompson Creek

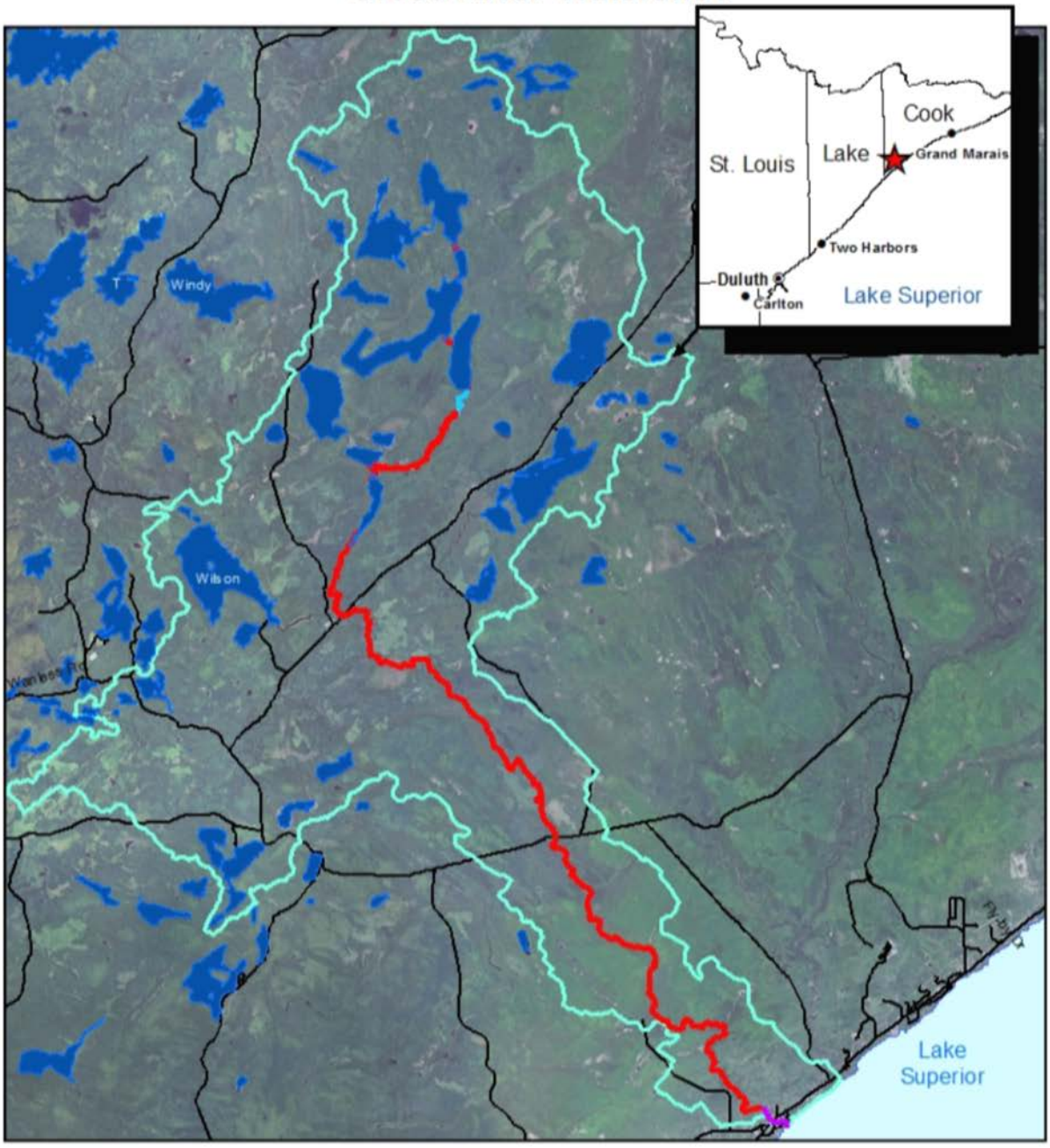
Legend

- New Stream Access Point
- Easement Pursued But Declined By Landowner
- New Easement
- Angler Access Via Public Lands or Easements
- Superior Hiking Trail
- Stream Segment With No Angler Access
- Cascade River Watershed

N

0 1 2
Miles

Cross River Watershed



River Miles in Watershed* = 25.6 miles
River Length on Public Land and Easements = 24.3 miles

*Cross River

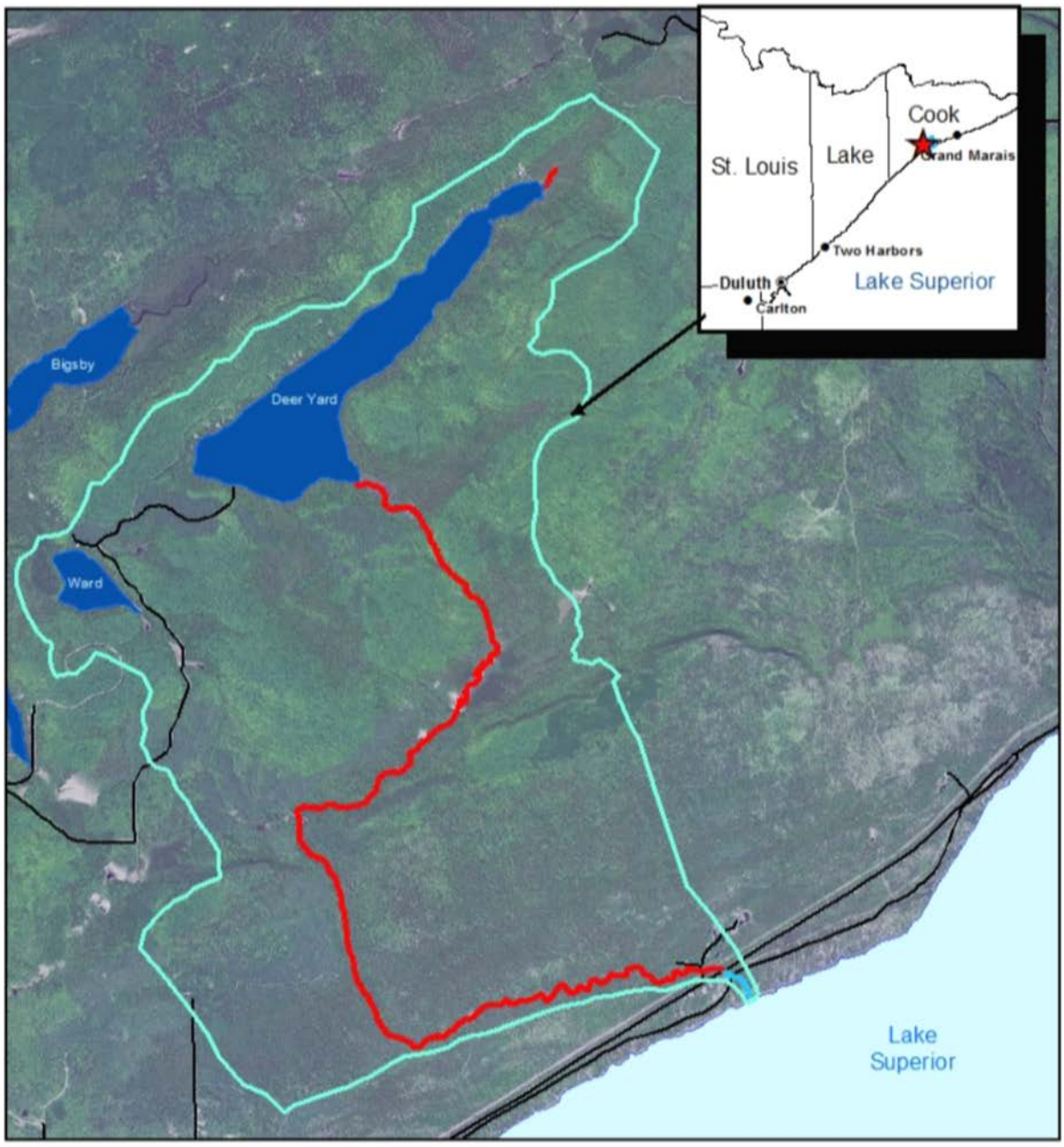
Legend

- Easement Pursued But Declined By Landowner
- Angler Access Via Public Lands or Easements
- Stream Segement With No Angler Access
- Cross River Watershed

N

0 0.5 1
Miles

Deer Yard Creek (Spruce) Creek Watershed



River Miles in Watershed* = 8.2 miles
River Length on Public Land and Easements = 8.0 miles

*Deer Yard (Spruce) Creek

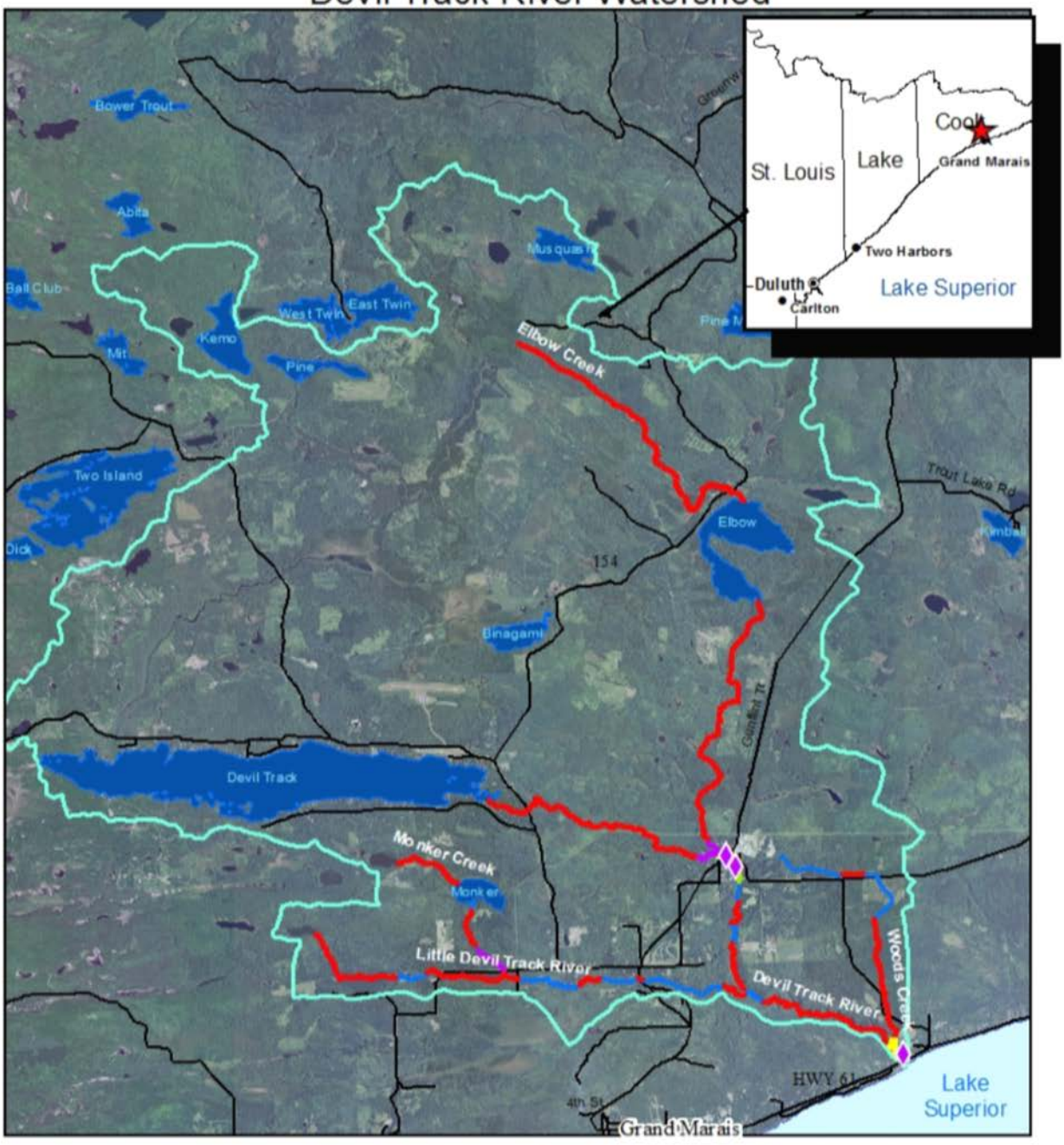
Legend

- Deer_Yard_Watershed
- Angler Access Via Public Lands or Easements
- Stream Segment With No Angler Access

N

0 0.25 0.5
Miles

Devil Track River Watershed



River Miles in Watershed* = 32.3 miles
River Length on Public Land and Easements = 21.8 miles
New Easements = 0.9 miles
Increased Connectivity = 4.2 miles
New Access Points = 3

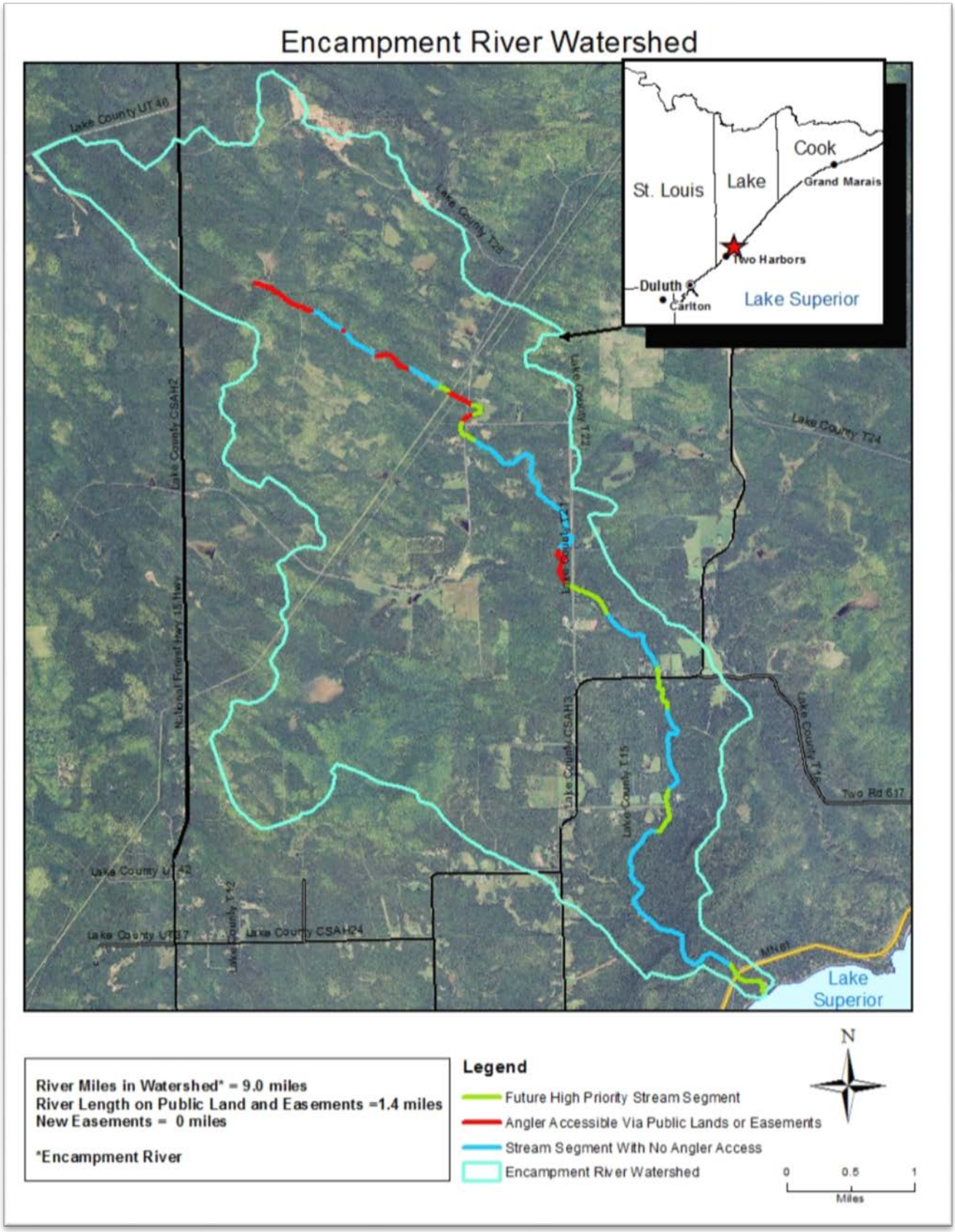
*Devil Track River, Little Devil Track River, Woods Creek and Elbow Creek

Legend

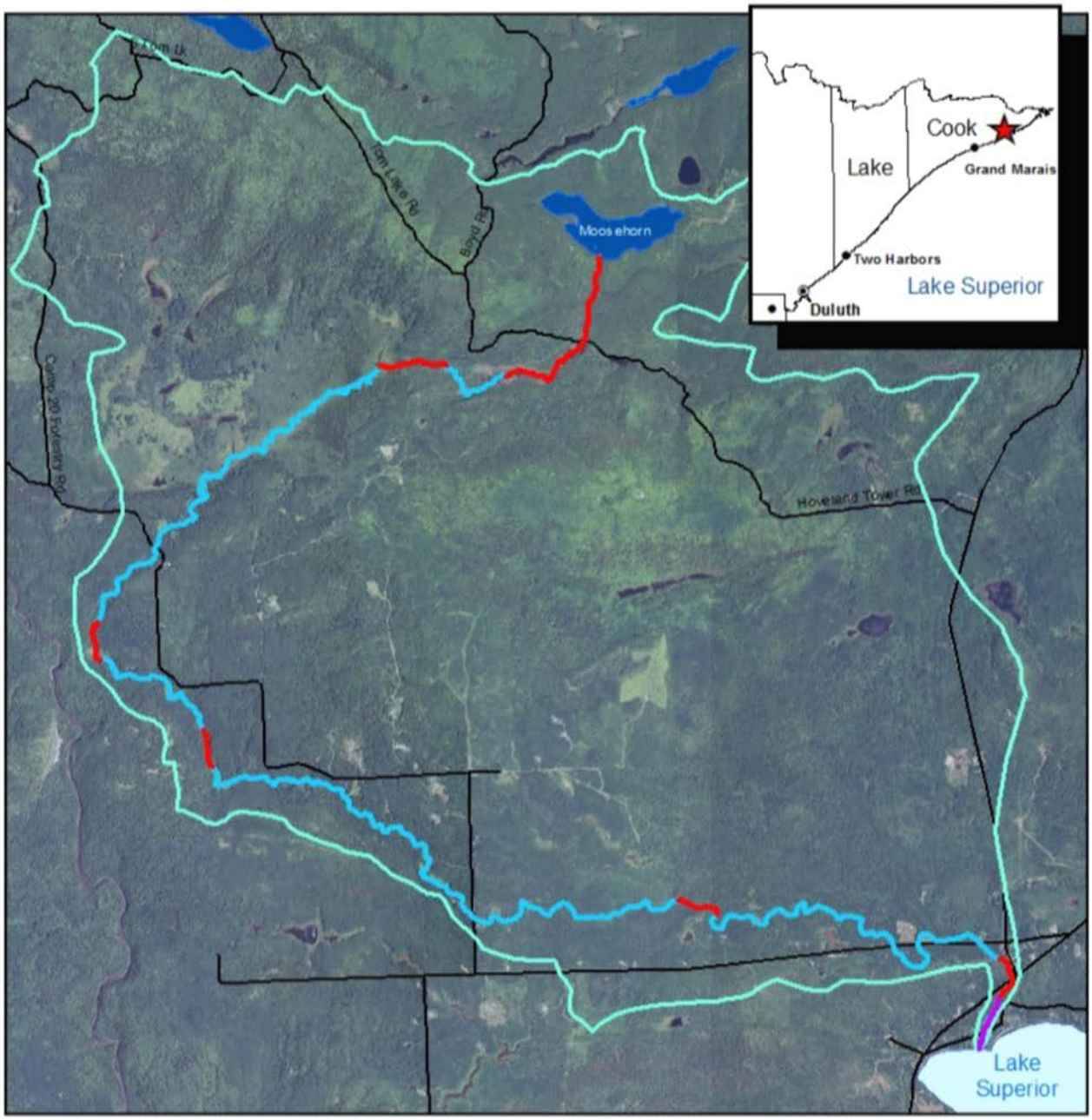
- New Stream Access Point
- Future High Priority Stream Segment
- Easement Pursued But Declined By Landowner
- New Easement
- Angler Access Via Public Lands or Easements
- Stream Segment With No Angler Access
- Devil Track River Watershed

N

0 0.5 1
Miles


Encampment River Watershed
St. Louis
Lake
Cook
Grand Marais
Two Harbors
Duluth
Carlton
Lake Superior
Lake County UT 46
Lake County T23
Lake County CSAH2
Lake County T22
Lake County T24
National Forest Hwy 15 Hwy
Lake County CSAH3
Lake County T15
Lake County T16
Two Rd 617
Lake County UT 42
Lake County T42
Lake County UT37
Lake County CSAH24
Minnesota
Lake Superior
River Miles in Watershed* = 9.0 miles
River Length on Public Land and Easements =1.4 miles
New Easements = 0 miles
*Encampment River
Legend
Future High Priority Stream Segment
Angler Accessible Via Public Lands or Easements
Stream Segment With No Angler Access
Encampment River Watershed
N
0
0.5
1
Miles

Flute Reed River Watershed



River Miles in Watershed* = 11.7 miles
River Length on Public Land and Easements = 1.7 miles

* Flute Reed River

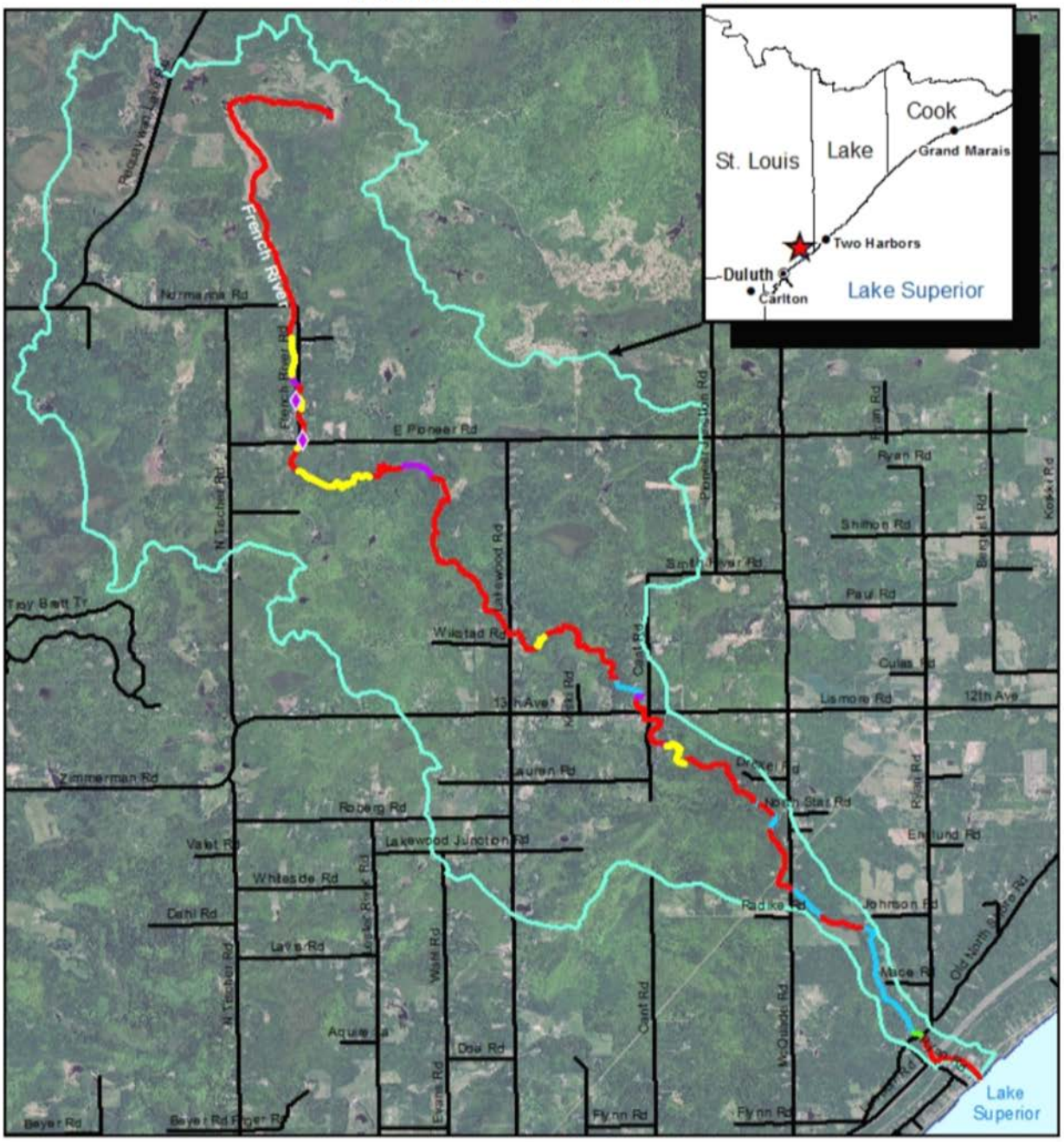
Legend

- Angler Accessible Via Public Lands or Easements
- Easement Pursued But Declined By Landowner
- Stream Segment With No Angler Access
- Flute_Reed_Watershed

N

0 0.25 0.5
Miles

French River Watershed



River Miles in Watershed* = 13.9 miles
River Length on Public Land and Easements = 10.7 mi.
New Easements = 1.1 miles
Increased Connectivity = 8.1 miles
New Access Points = 2

*French River

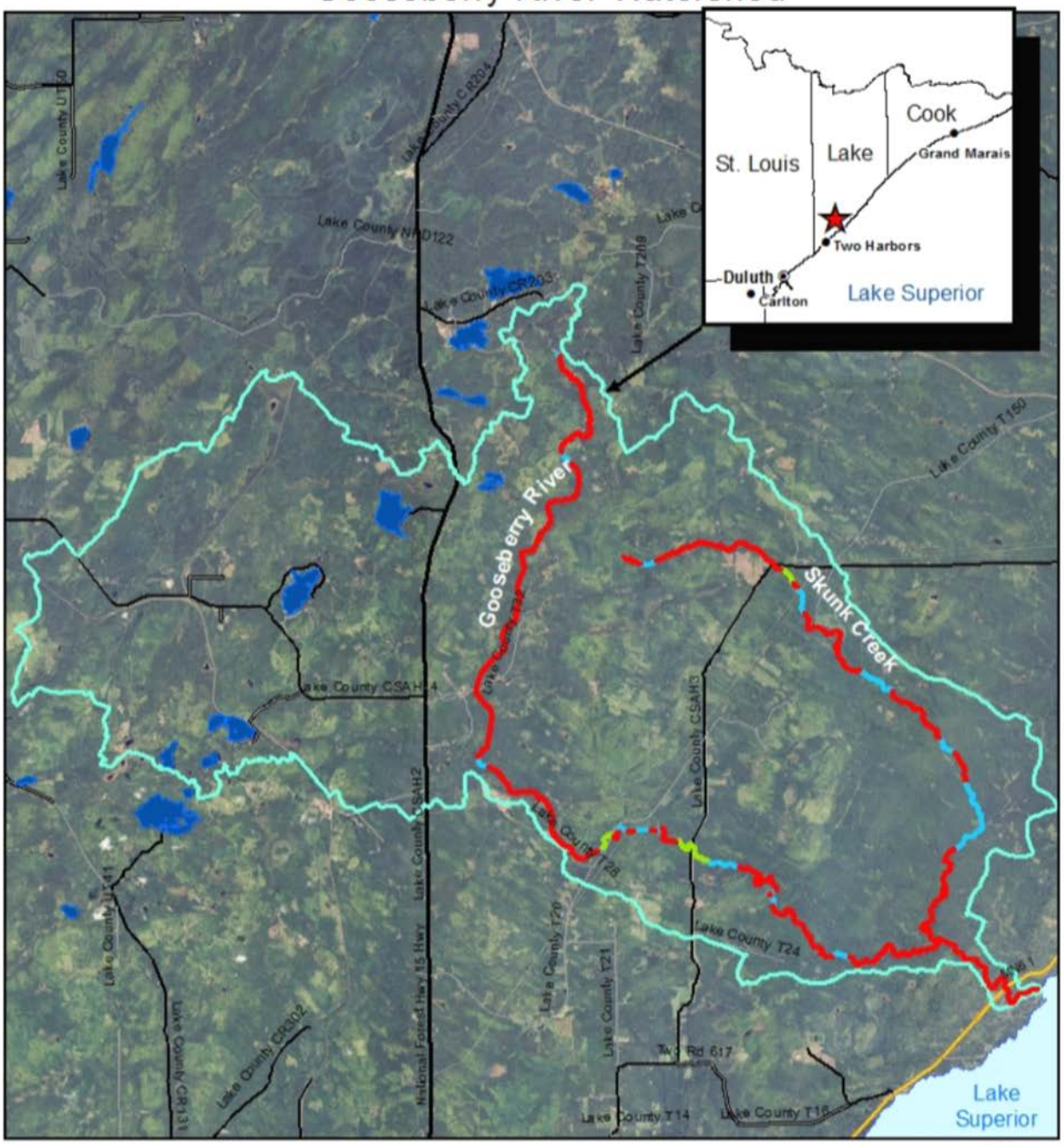
Legend

- New Stream Access Point
- New Easement
- Angler Accessible Via Public Lands or Easements
- Easement Pursued But Declined By Landowner
- Future High Priority Stream Segment
- Stream Segment With No Angler Access
- French River Watershed

N

0 0.5 1
Miles

Gooseberry River Watershed



River Miles in Watershed* = 35.1 miles
River Length on Public Land and Easements = 28.1 miles
New Easements = 0 miles

*Gooseberry River and Skunk Creek

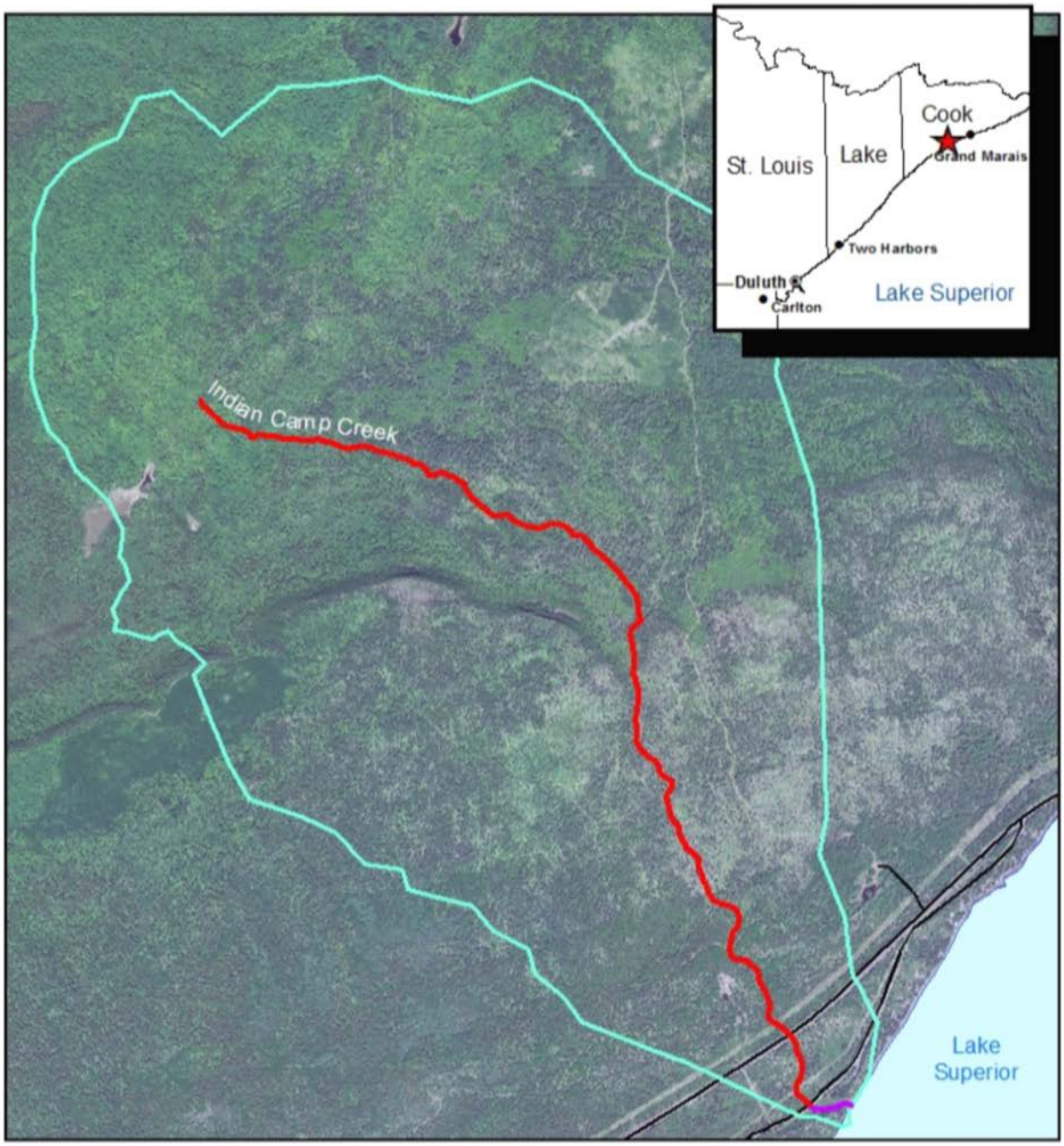
Legend

- Angler Accessible Via Public Lands or Easements
- Future High Priority Stream Segment
- Stream Segment With No Angler Access
- Gooseberry River Watershed

N

0 1 2
Miles

Indian Camp Creek Watershed



River Miles in Watershed* = 2.7 miles
River Length on Public Land and Easements = 2.6 miles

*Indian Camp Creek

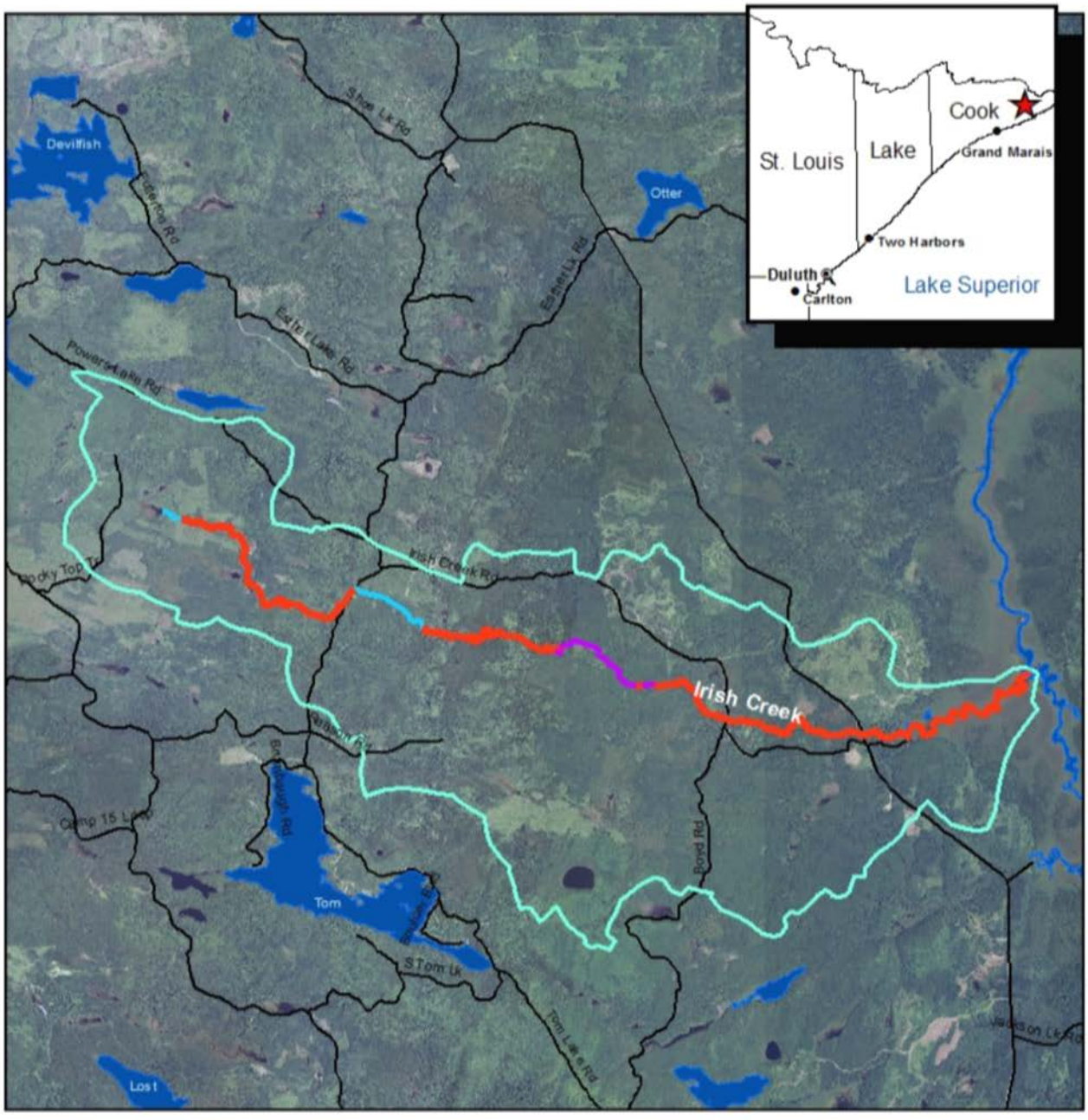
Legend

- Easement Pursued But Declined By Landowner
- Angler Access Via Public Lands or Easements
- Stream Segment With No Angler Access
- Indian Camp Creek Watershed

N

0 0.125 0.25
Miles

Irish Creek Watershed



River Miles in Watershed* = 8.9 miles
River Length on Public Land and Easements = 5.4 miles

* Irish Creek

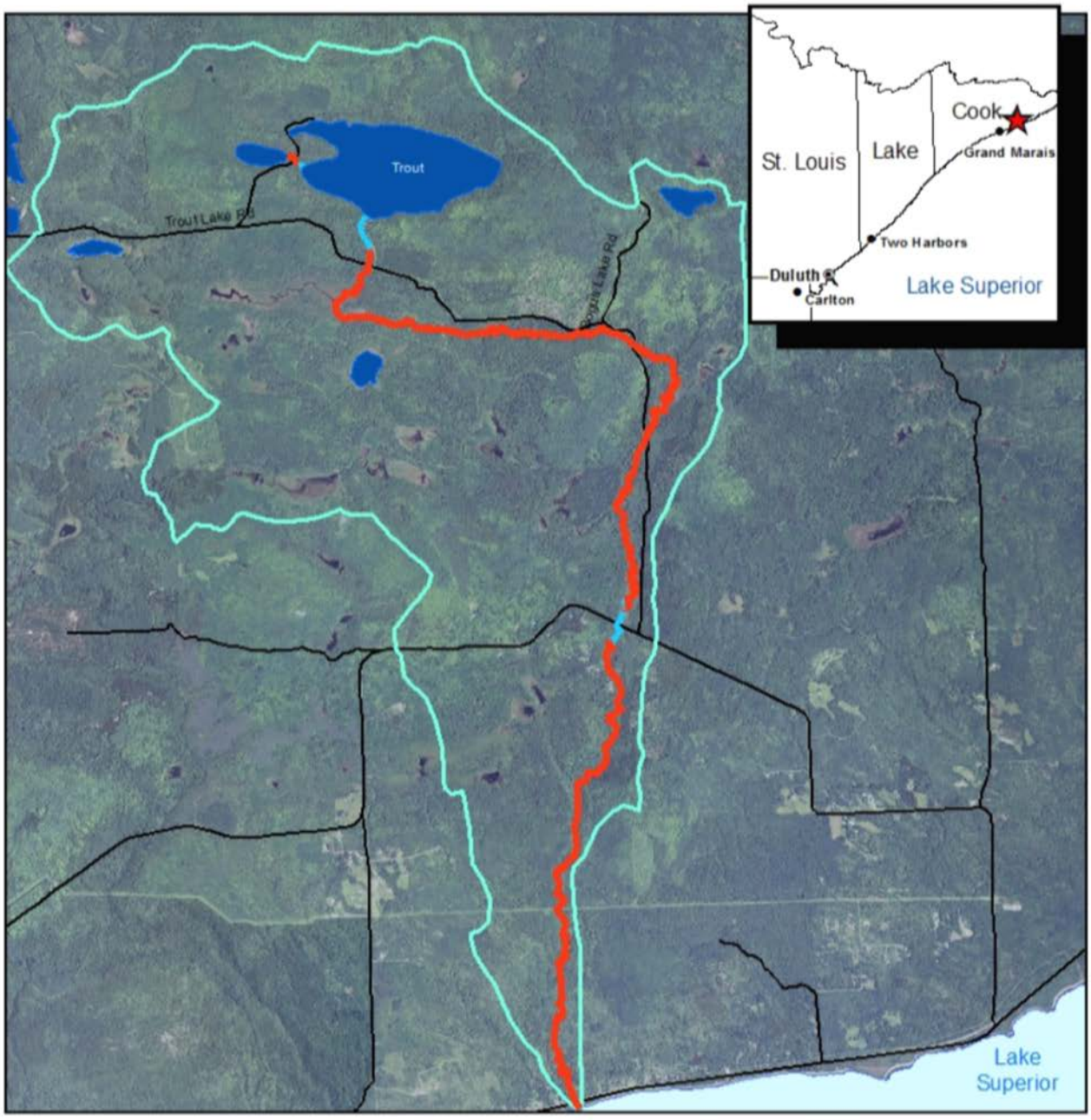
Legend

- Easement Pursued But Declined By Landowner
- Angler Accessible Via Public Lands and Easements
- Stream Segement With No Angler Access
- Irish Creek Watershed

N

0 0.5 1
Miles

Kadunce Creek Watershed



River Miles in Watershed* = 8.9 miles
River Length on Public Land and Easements = 7.8 miles

* Kadunce Creek

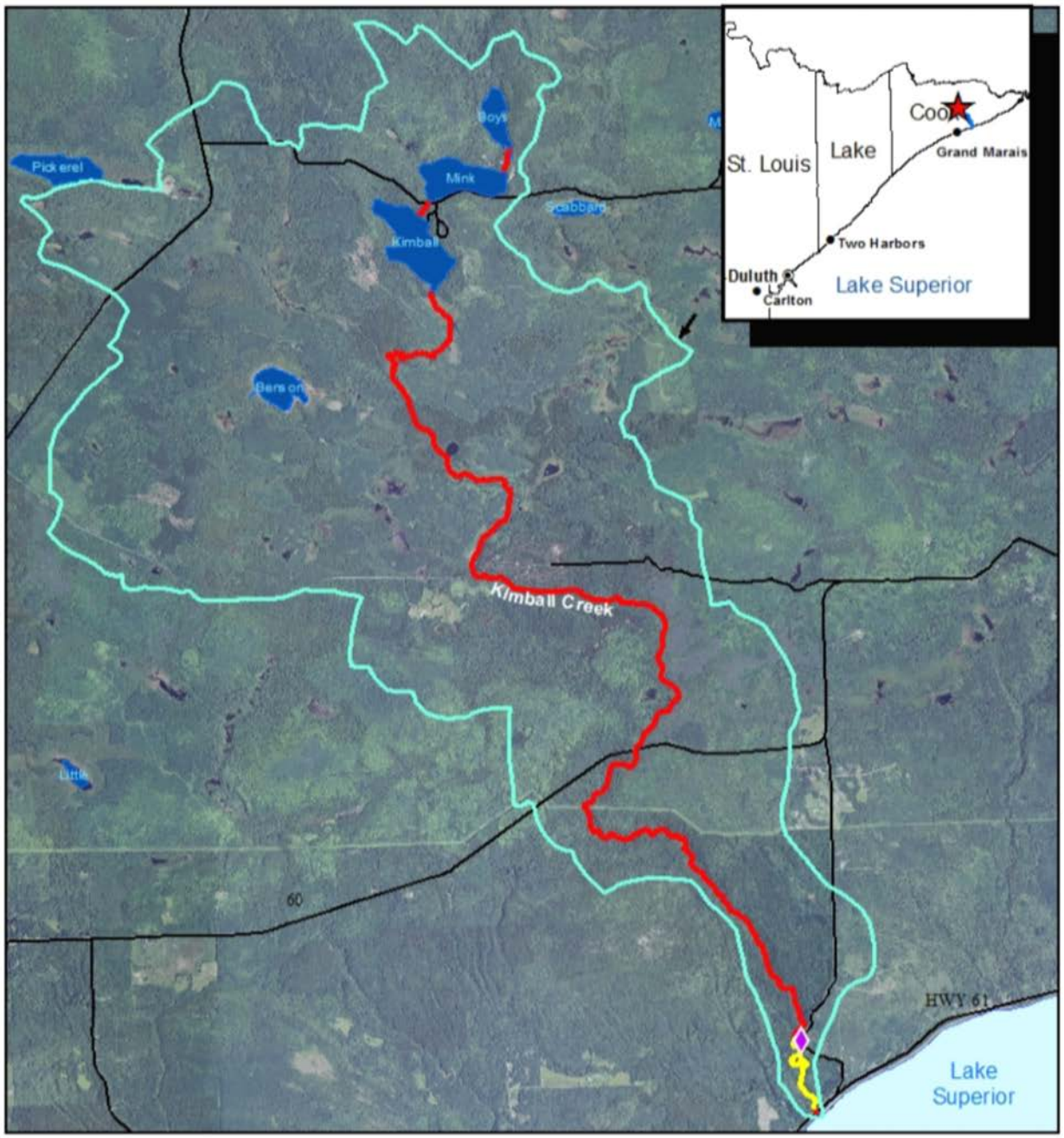
Legend

- Angler Access Via Public Lands or Easements
- Stream Segment With No Angler Access
- Kadunce Watershed

N

0 0.5 1
Miles

Kimball Creek Watershed



River Miles in Watershed* = 10.1 miles
River Length on Public Land and Easements = 10.0 miles
New Easements = 0.7 miles
Increased Connectivity =10.0 miles
New Access Points = 1

*Kimball Creek

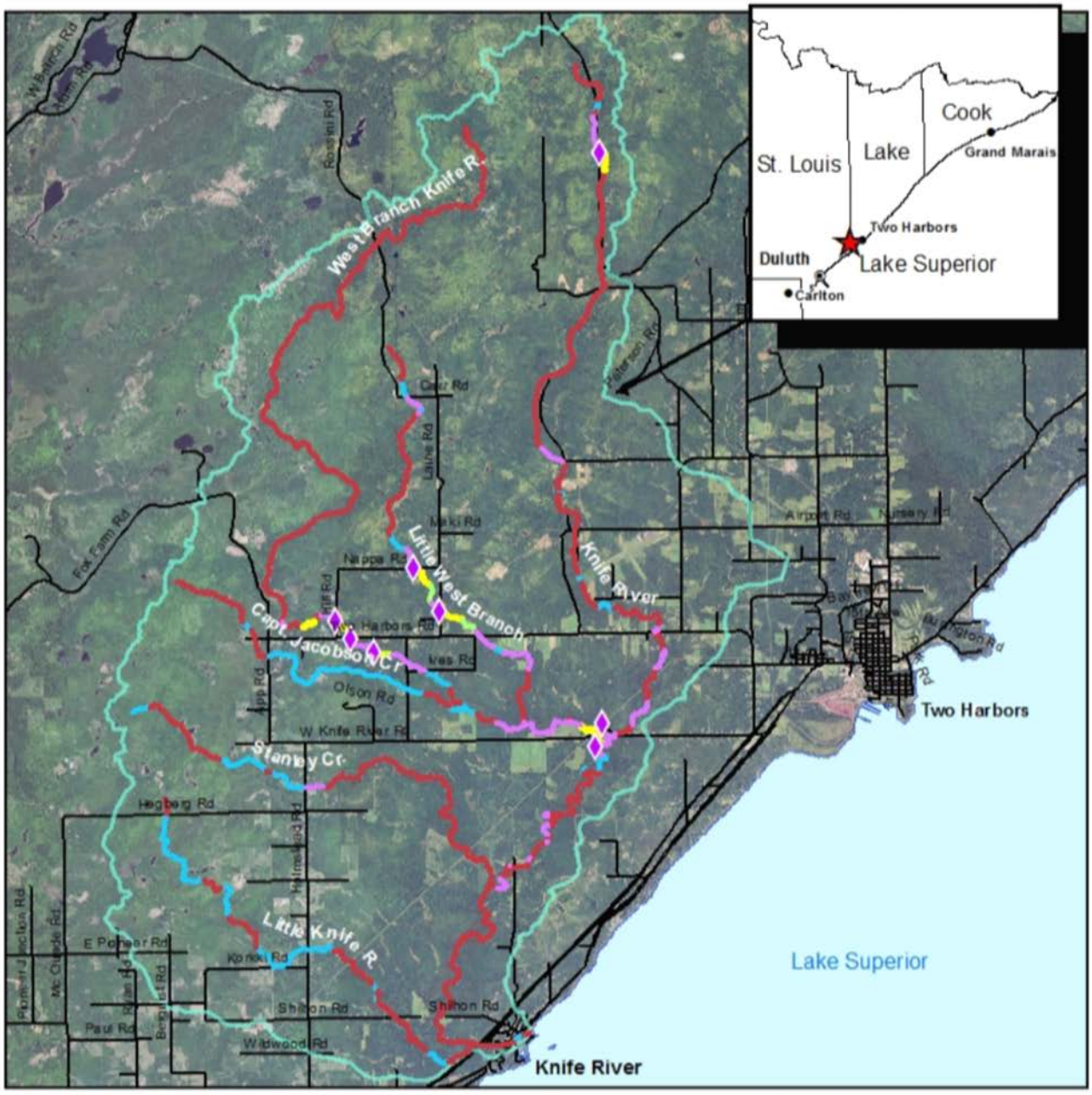
Legend

- New Stream Access Point
- New Easement
- Angler Access Via Public Lands or Easements
- Kimball Creek Watershed
- Stream Segment With No Angler Access

N

0 0.5 1
Miles

Knife River Watershed



River Miles in Watershed* = 73.8 miles
River Length on Public Land and Easements = 51.8 miles
New Easements = 2.6 miles
Increased Connectivity = 6.2 miles
New Access Points = 8

*Stanley Creek, Little West Branch Knife River, West Branch Knife River, Captain Jacobson Creek, Little Knife River and Knife River

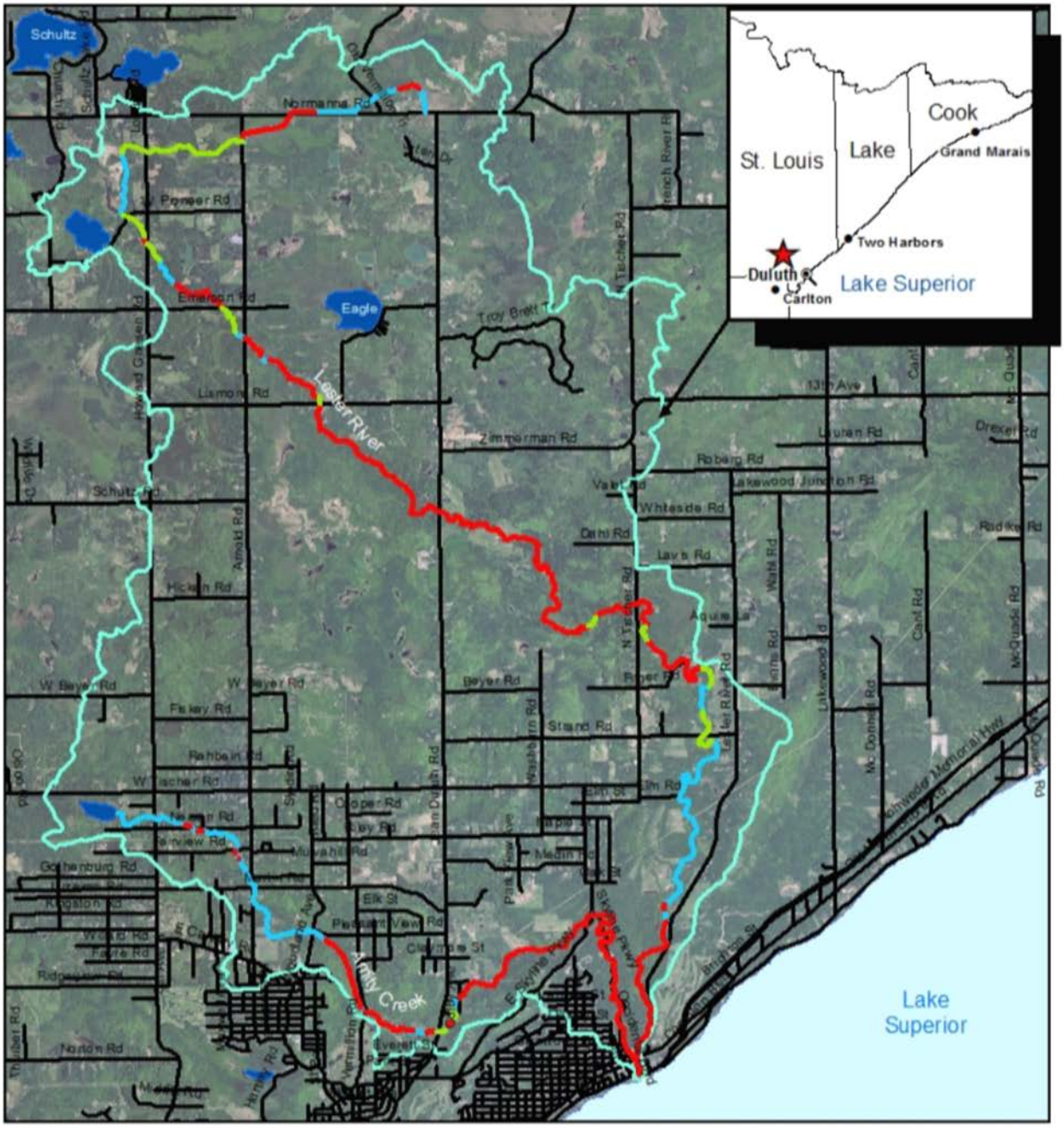
Legend

- New Stream Access Point
- Easement Pursued But Declined by Landowner
- Future High Priority Stream Segment
- New Easement
- Angler Accessible Via Public Lands or Easements
- Stream Segment With No Angler Access
- Knife River Watershed

N

0 0.5 1
Miles

Lester River Watershed



River Miles in Watershed* = 21.5 miles
River Length on Public Land and Easements = 18.6 miles
New Easements = 0.0 miles

*Amity Creek and Lester River

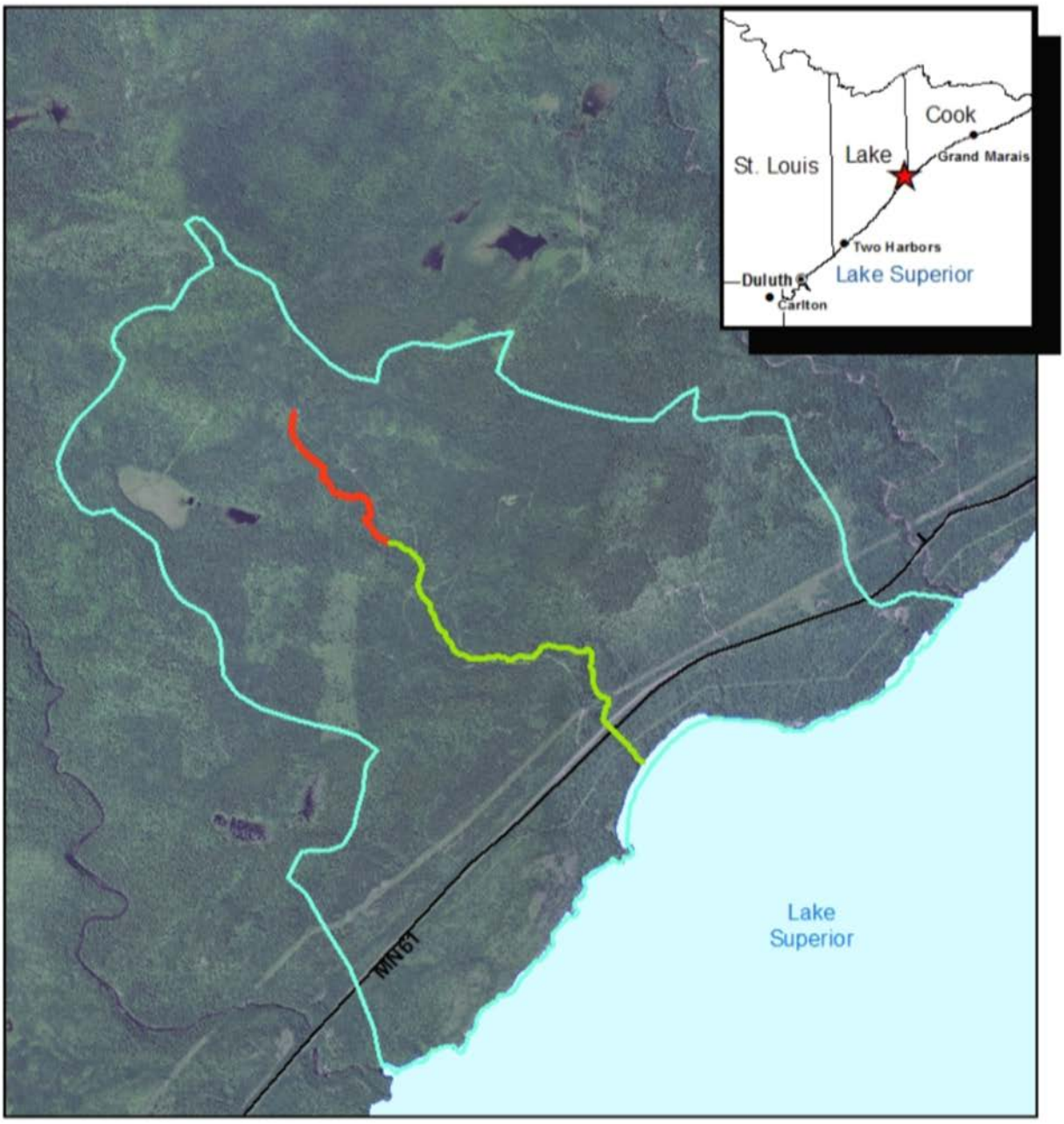
Legend

- Future High Priority Stream Segment
- Angler Accessible Via Public Lands or Easements
- Stream Segment With No Angler Access
- Lester River Watershed

N

0 0.5 1
Miles

Little Manitou River Watershed



River Miles in Watershed* = 1.8 miles
River Length on Public Land and Easements = 0.6 miles

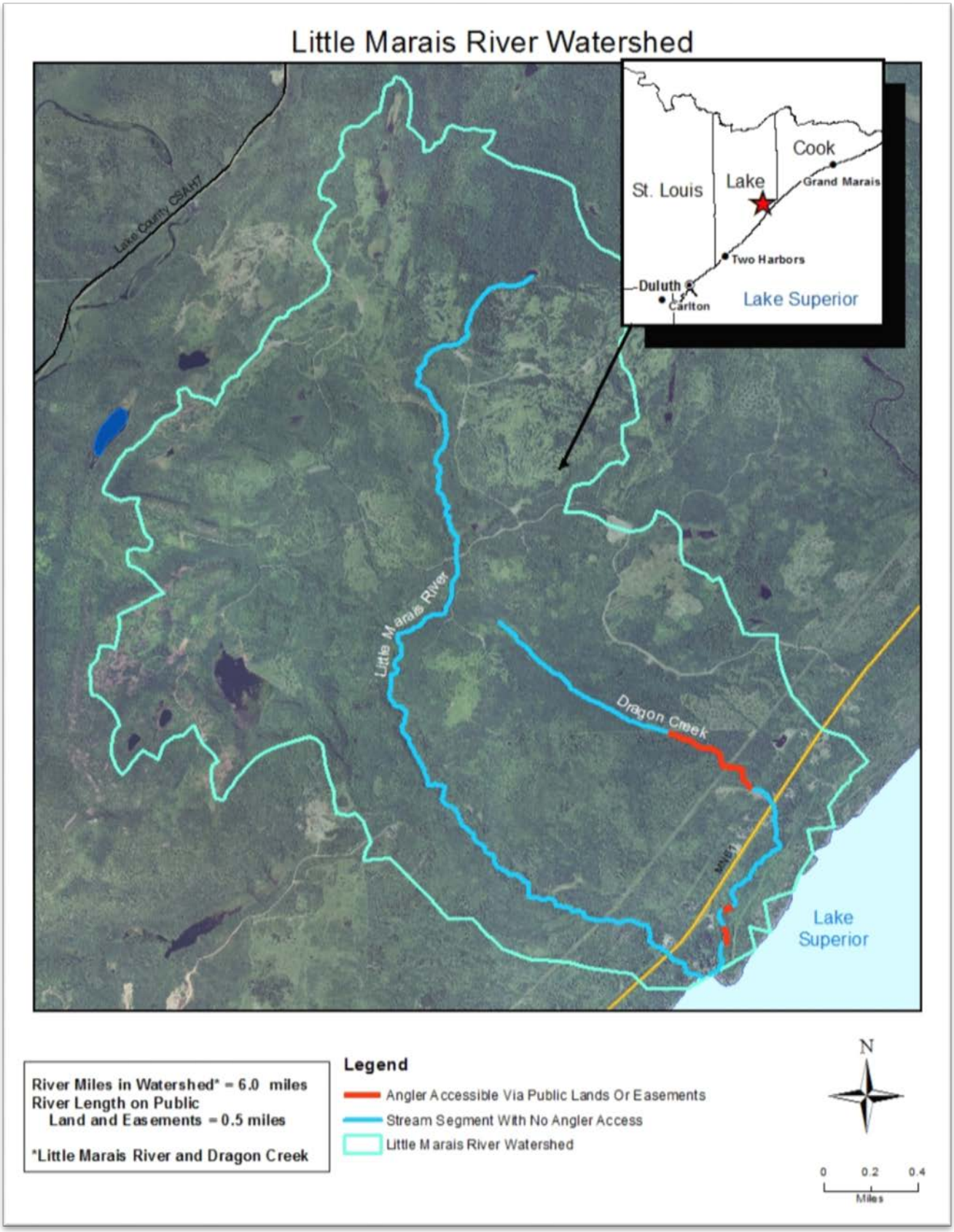
*Little Manitou River

Legend

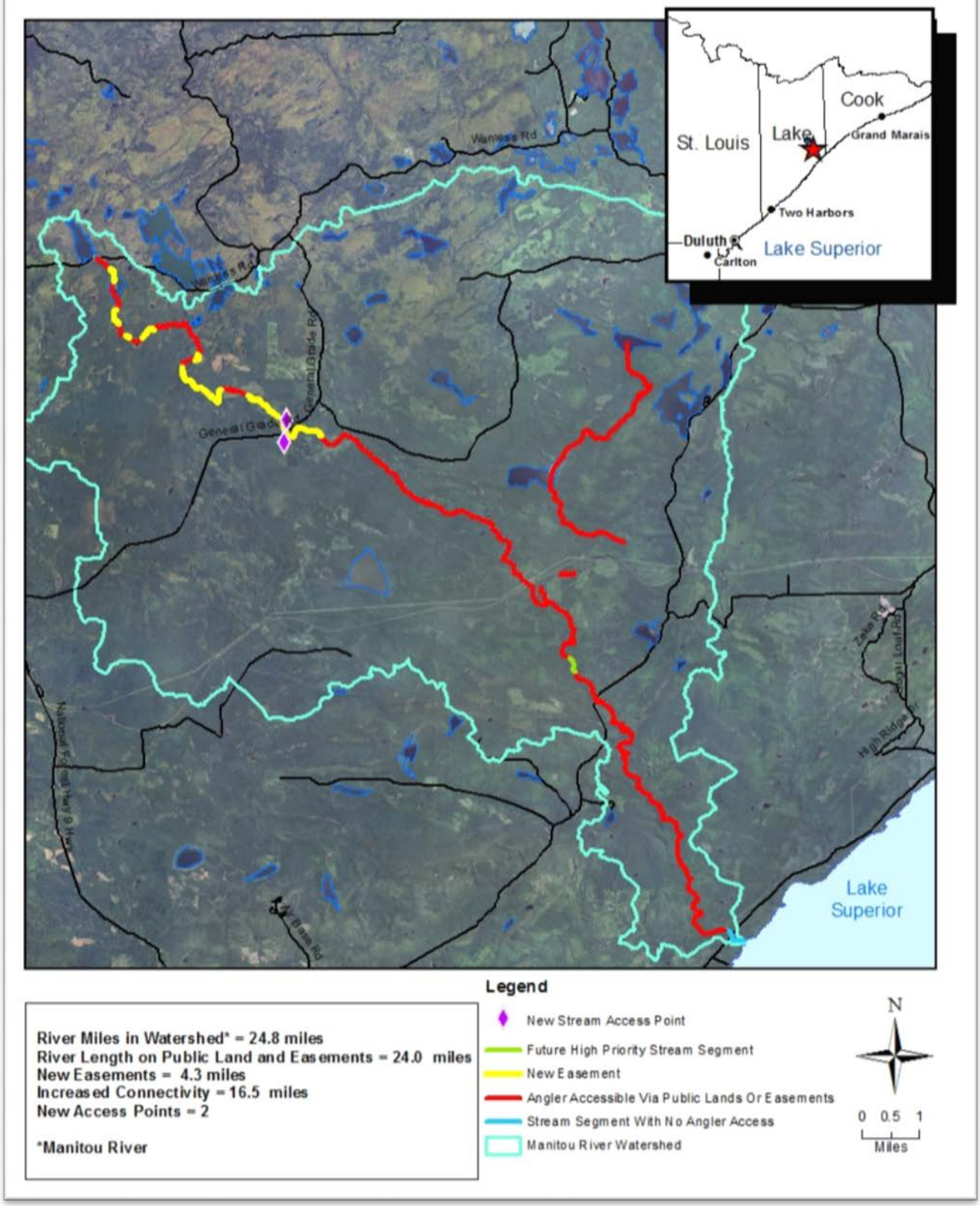
- Future High Priority Stream Segment
- Angler Accessible Via Public Lands Or Easements
- Stream Segment With No Angler Access
- Little Manitou River Watershed

N

0 0.25 0.5
Miles


Little Marais River Watershed
Lake County CSAH7
St. Louis
Lake
Cook
Grand Marais
Two Harbors
Duluth
Carlton
Lake Superior
Little Marais River
Dragon Creek
MN61
Lake Superior
River Miles in Watershed* = 6.0 miles
River Length on Public Land and Easements = 0.5 miles
*Little Marais River and Dragon Creek
Legend
Angler Accessible Via Public Lands Or Easements
Stream Segment With No Angler Access
Little Marais River Watershed
N
0 0.2 0.4
Miles

Manitou River Watershed



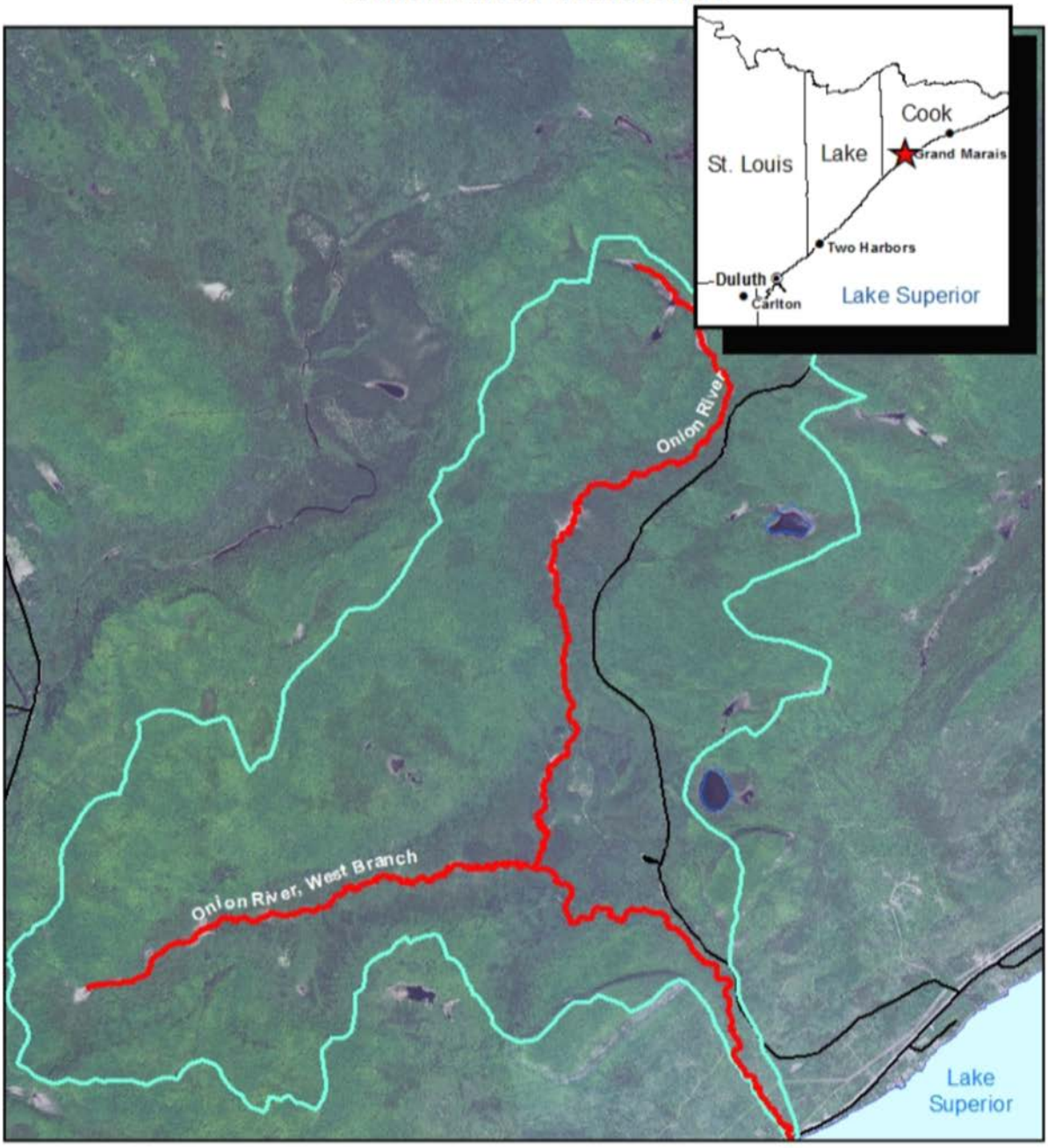
River Miles in Watershed* = 24.8 miles
River Length on Public Land and Easements = 24.0 miles
New Easements = 4.3 miles
Increased Connectivity = 16.5 miles
New Access Points = 2

*Manitou River

Legend

- New Stream Access Point
- Future High Priority Stream Segment
- New Easement
- Angler Accessible Via Public Lands Or Easements
- Stream Segment With No Angler Access
- Manitou River Watershed

Onion River Watershed



River Miles in Watershed* = 9.6 miles
River Length on Public Land and Easements = 9.6 miles

*West Branch Onion River and Onion River

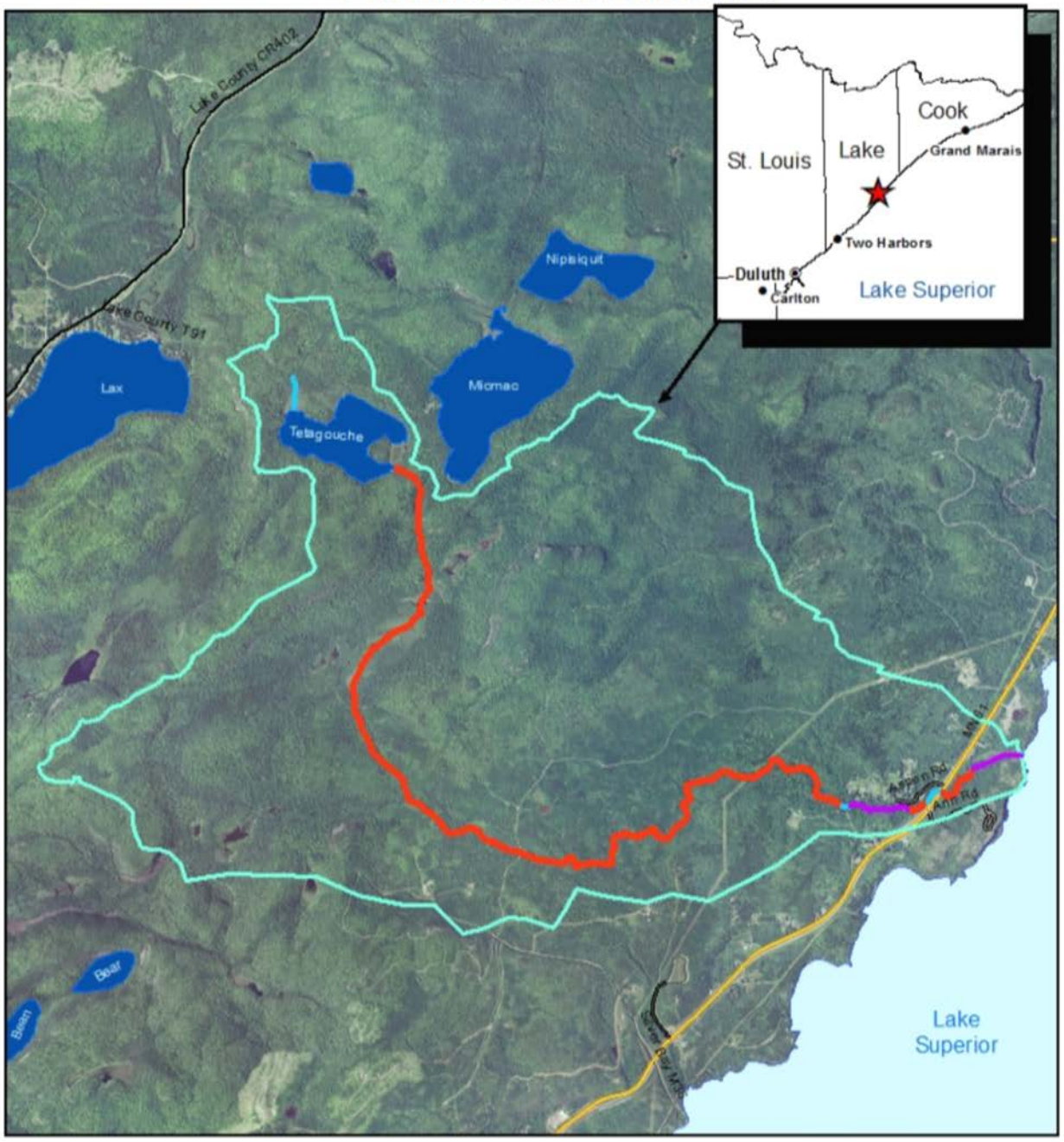
Legend

- Angler Access Via Public Lands or Easements
- Stream Segment With No Angler Access
- Onion River Watershed

N

0 0.25 0.5
Miles

Palisade Creek Watershed



River Miles in Watershed* = 5.7 miles
River Length on Public Land and Easements = 4.5 miles
New Easements = 0 miles

*Palisade Creek

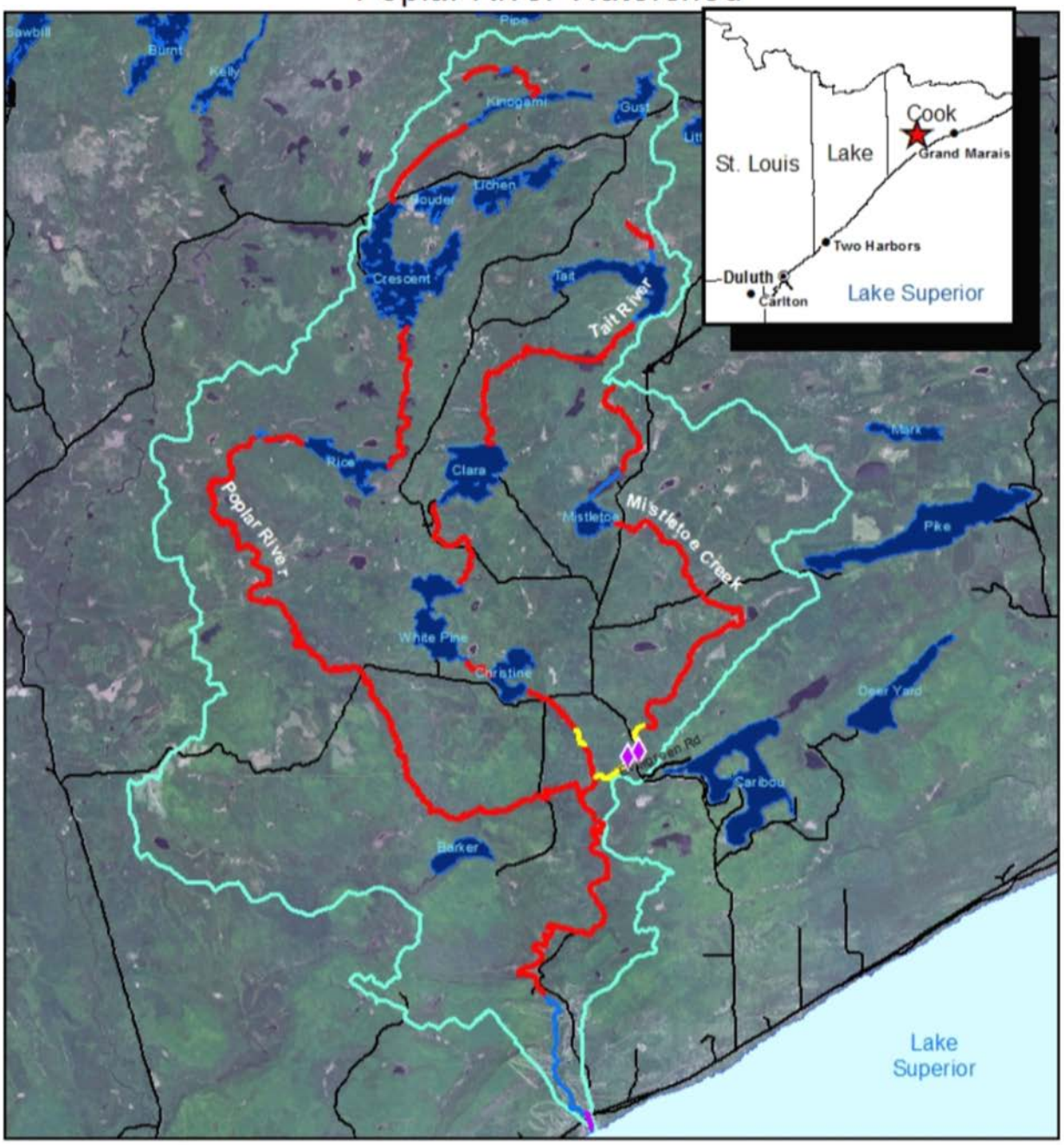
Legend

- Angler Accessible Via Public Lands Or Easements
- Easement Pursued but Declined by Landowner
- Stream Segment With No Angler Access
- Palisade Creek Watershed

N

0 0.275 0.55
Miles

Poplar River Watershed



River Miles in Watershed* = 59.7 miles
River Length on Public Land and Easements = 44.9 miles
New Easements = 1.8 miles
Increased Connectivity = 25.5 miles
New Access Points = 2

*Poplar River, Tait River and Mistletoe Creek

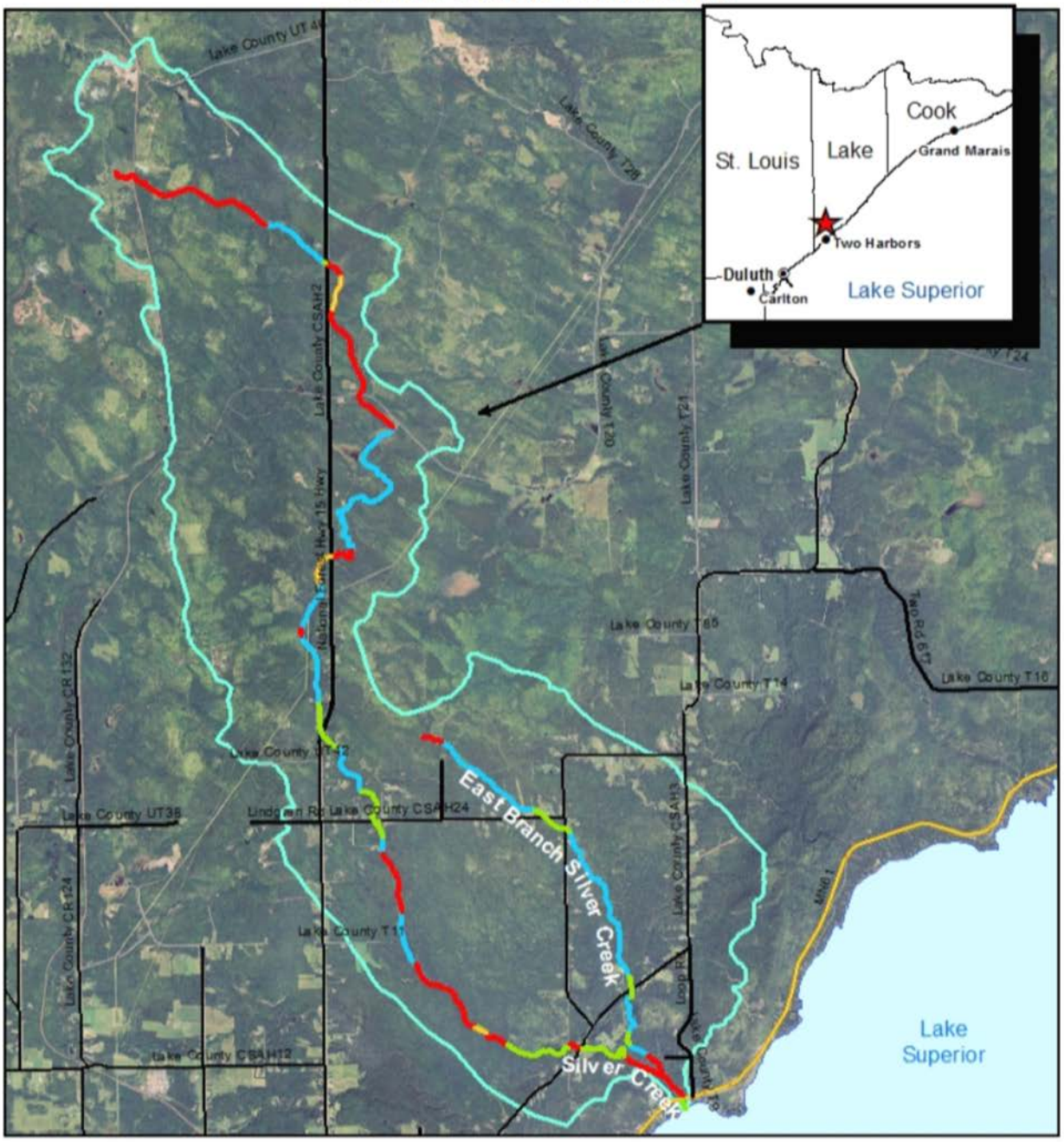
Legend

- New Stream Access Point
- Easement Pursued But Declined By Landowner
- New Easement
- Angler Accessible Via Public Lands or Easements
- Stream Segment With No Angler Access
- Poplar River Watershed

N

0 0.5 1
Miles

Silver Creek Watershed



Legend

- Interested Landowner But No Funding
- Future High Priority Stream Segment
- Angler Accessible Via Public Lands or Easements
- Stream Segment With No Angler Access
- Silver Creek Watershed

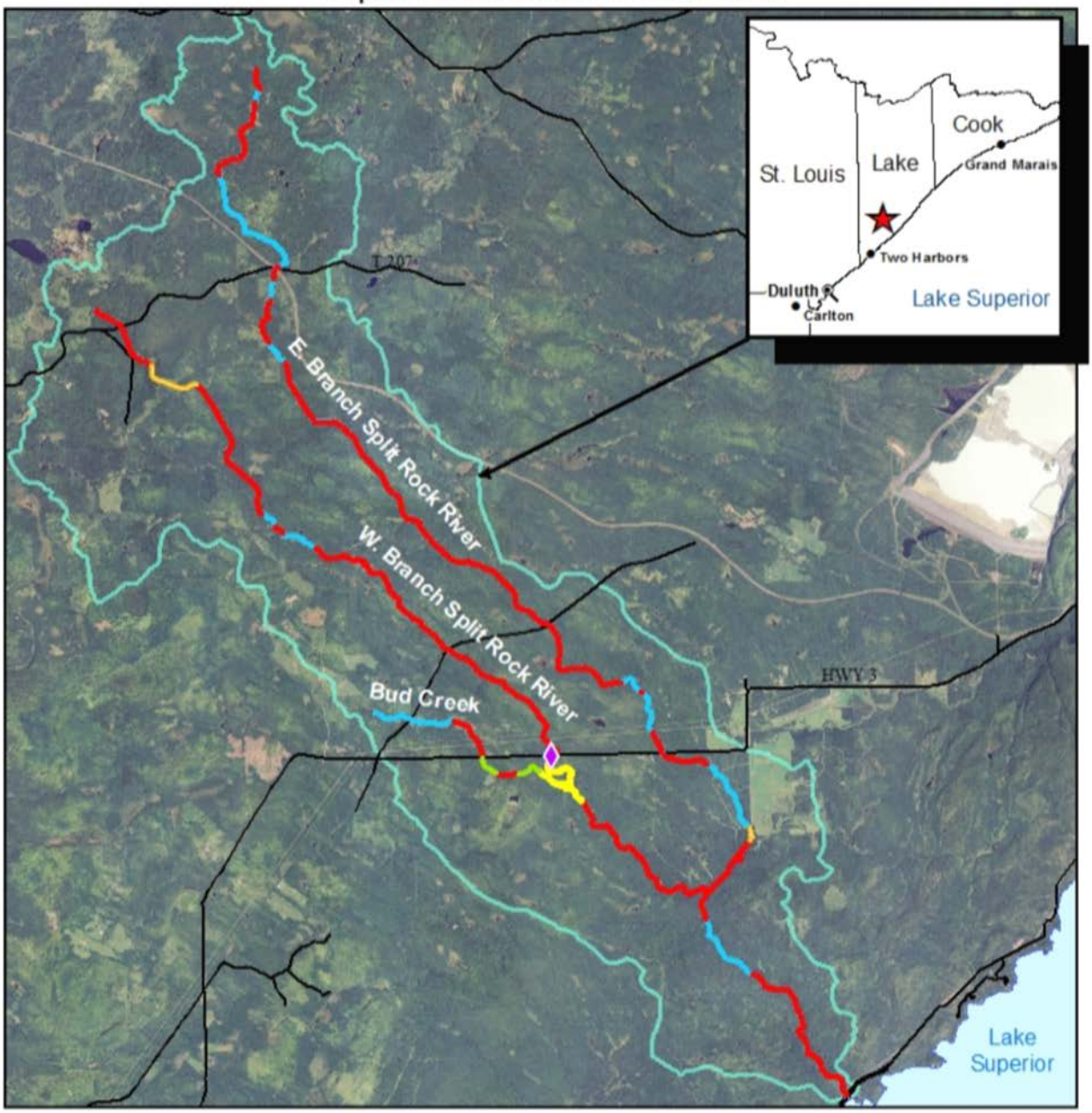
N

0 0.5 1 Miles

River Miles in Watershed* = 16.9 miles
River Length on Public Land and Easements = 6.1 miles
New Easements = 0 miles

*Silver Creek and East Branch Silver Creek

Split Rock River Watershed



River Miles in Watershed* = 32.4 miles
River Length on Public Land and Easements = 25.0 miles
New Easements = 1.6 miles
Interested Landowner-No Funding = 1.0 mile
Increased Connectivity = 9.4 miles
New Access Points = 1

*Split Rock River, East Branch Split Rock River, West Branch Split Rock River and Bud Creek

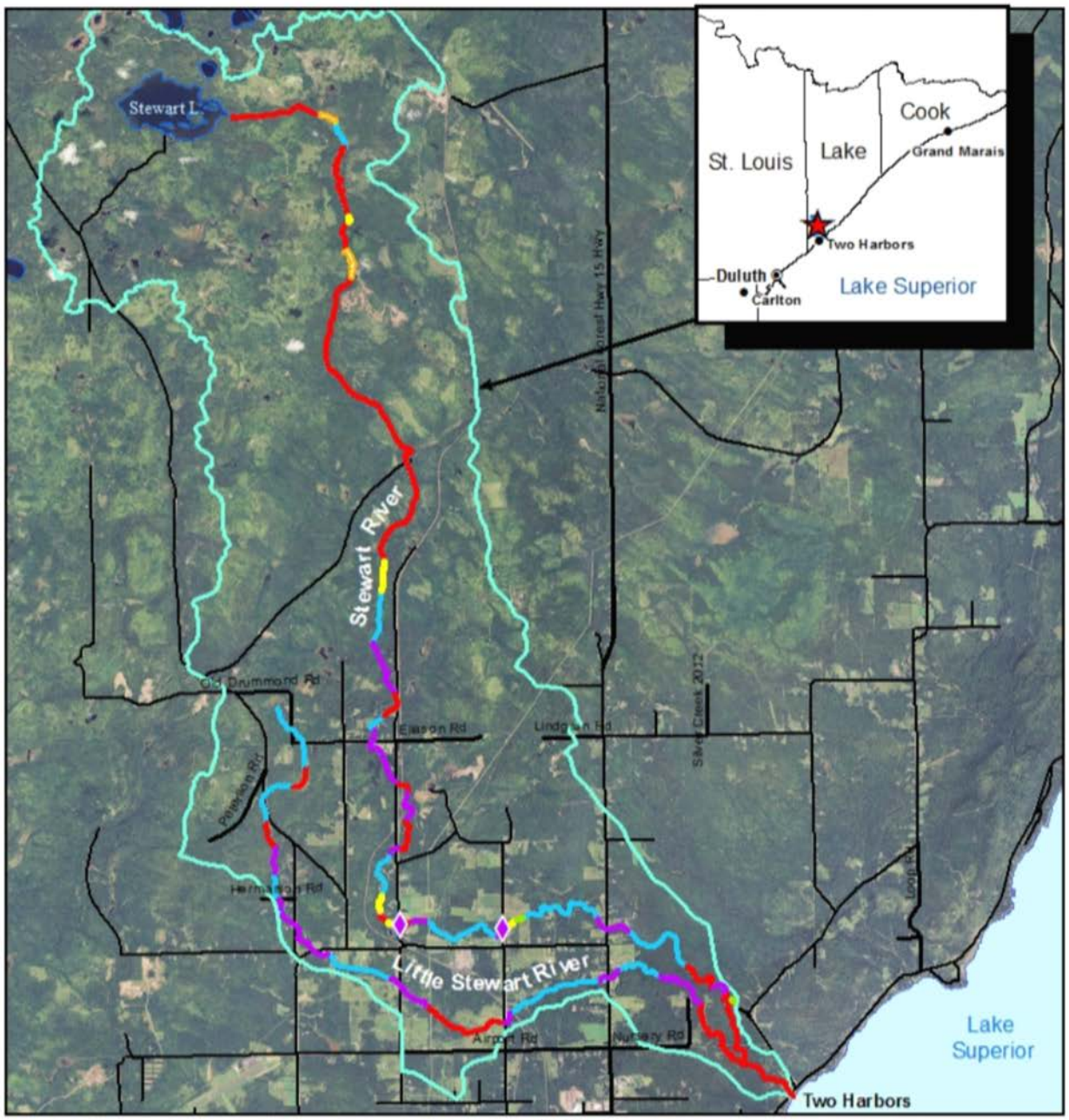
Legend

- New Stream Access Point
- Interested Landowner But No Funding
- Future High Priority Stream Segment
- New Easement
- Angler Access Via Public Lands Or Easements
- Stream Segment With No Angler Access
- Split Rock River Watershed

N

0 0.5 1
Miles

Stewart River Watershed



River Miles in Watershed* = 27.5 miles
River Length on Public Land and Easements = 13.0 miles
New Easements and Forest Legacy Purchase = 1.2 miles
Increased Connectivity = 7.7 miles
New Access Points = 2

*Little Stewart River and Stewart River

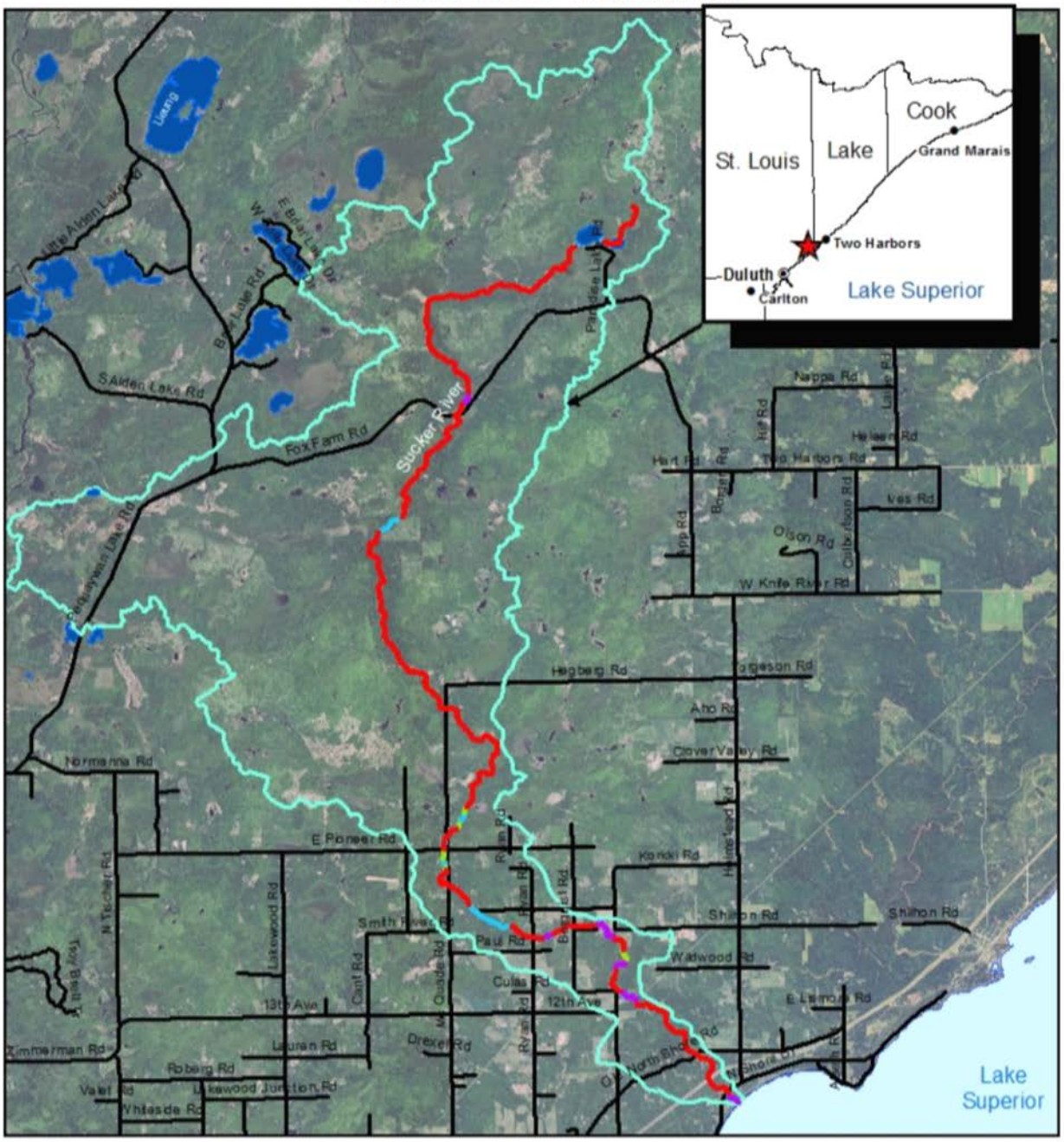
Legend

- New Stream Access Point
- Interested Landowner But No Funding
- Easement Pursued But Declined By Landowner
- Future High Priority Stream Segment
- New Easement
- Angler Accessible Via Public Lands or Easements
- Stream Segment With No Angler Access
- Stewart River Watershed

N

0 0.5 1
Miles

Sucker River Watershed



River Miles in Watershed* = 19.4 miles
River Length on Public Land and Easements = 15.9 miles

*Sucker River

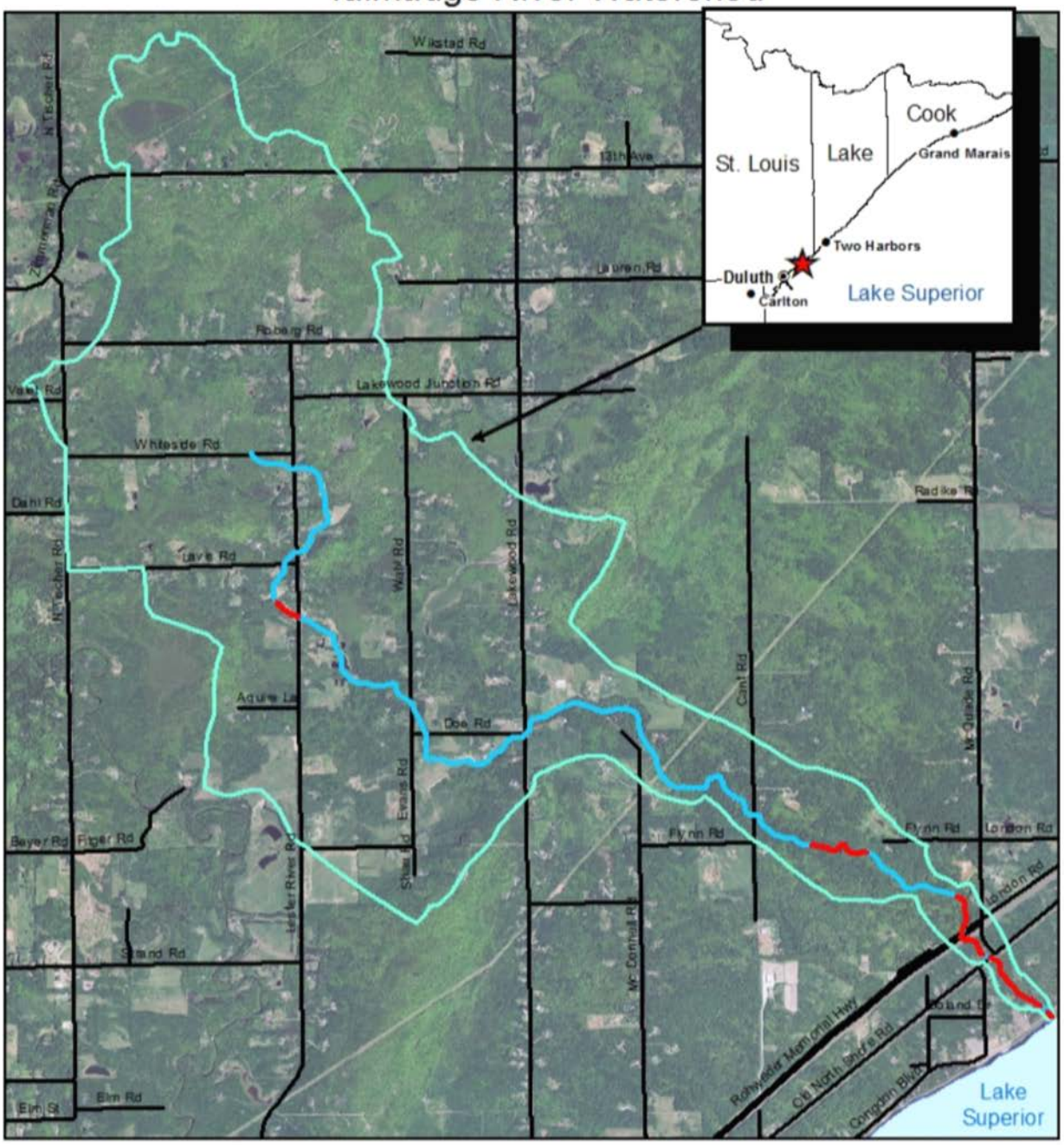
Legend

- Angler Accessible Via Public Lands or Easements
- Future High Priority Stream Segment
- Easement Pursued But Declined By Landowner
- Stream Segment With No Angler Access
- Sucker River Watershed

N

0 0.5 1
Miles

Talmadge River Watershed



River Miles in Watershed* = 6.0 miles
River Length on Public Land and Easements = 1.0 miles
New Easements = 0.0 miles

*Talmadge River

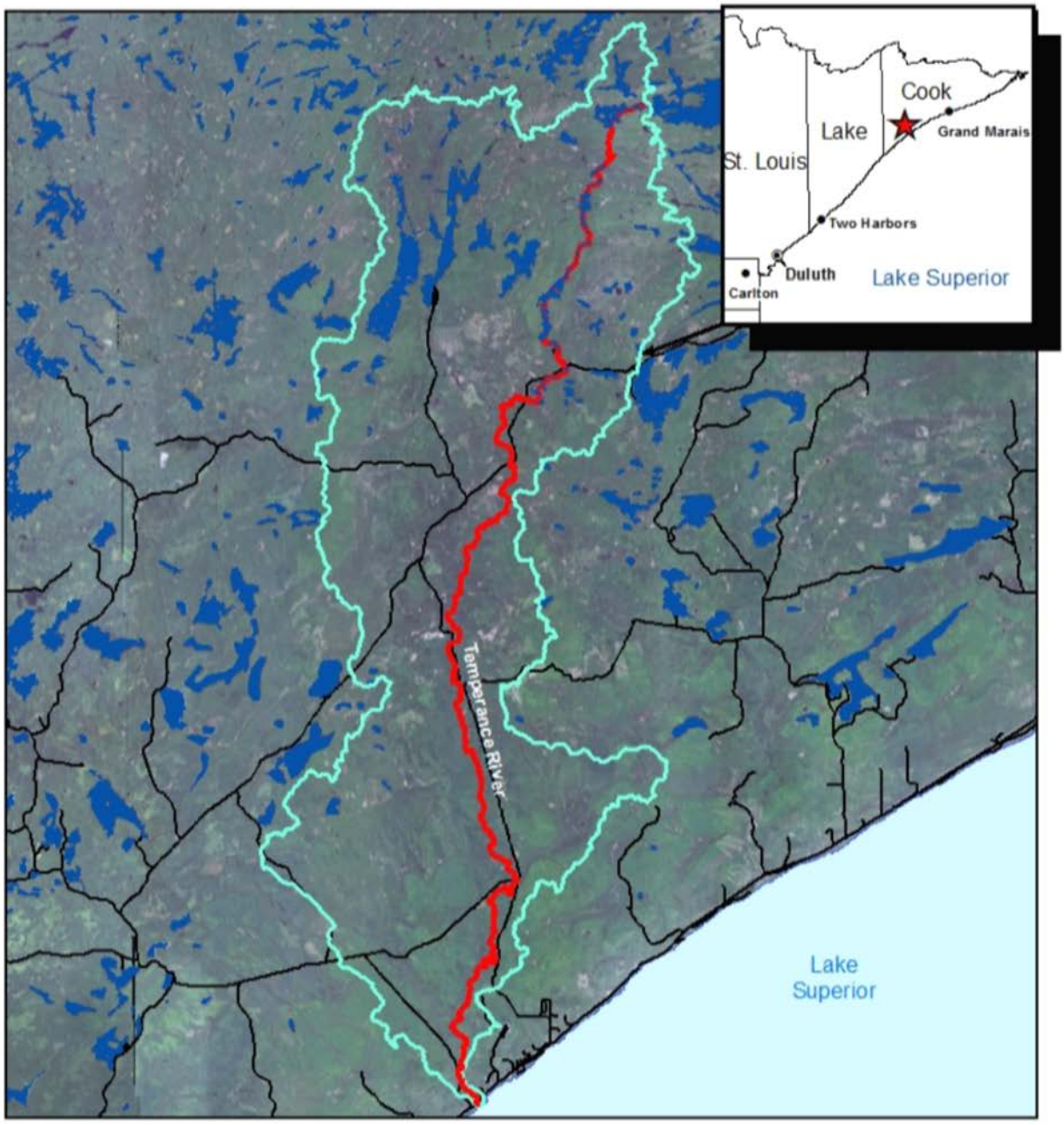
Legend

- Angler Accessible Via Public Lands or Easements
- Stream Segment With No Angler Access
- Talmadge River Watershed

N

0 0.5 1
Miles

Temperance River Watershed



River Miles in Watershed* = 39.3 miles
River Length on Public Land and Easements = 39.3 miles

*Temperance River

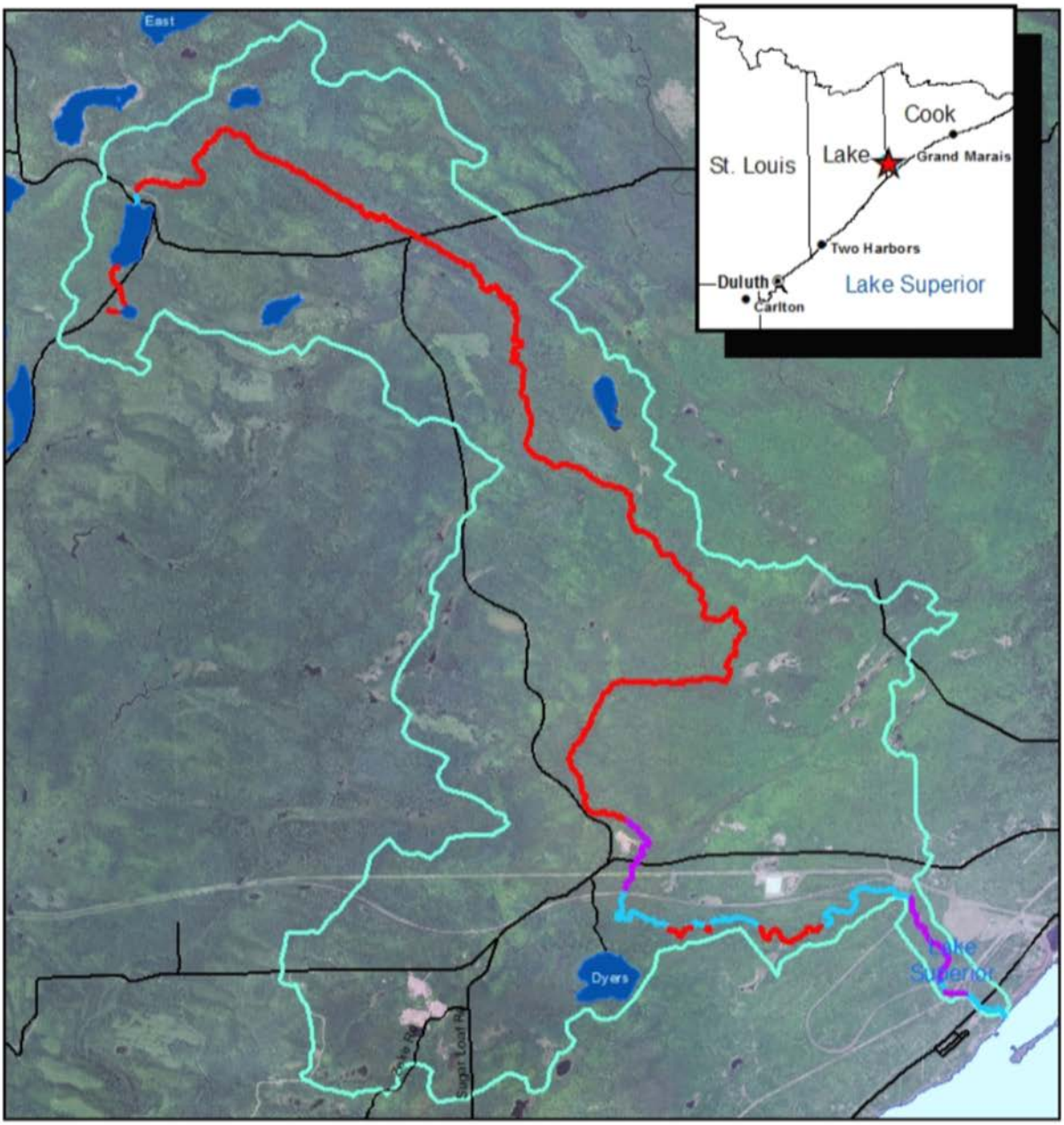
Legend

- Angler Access Via Public Lands or Easements
- Stream Segment With No Angler Access
- Temperance River Watershed

N

0 1 2
Miles

Two Island River Watershed



River Miles in Watershed* = 16.7 miles
River Length on Public Land and Easements = 10.8 miles

*Two Island River

Legend

- Easement Pursued But Declined By Landowner
- Angler Access Via Public Lands or Easements
- Stream Segment With No Angler Access
- Two Island River Watershed

N

0 0.5 1
Miles