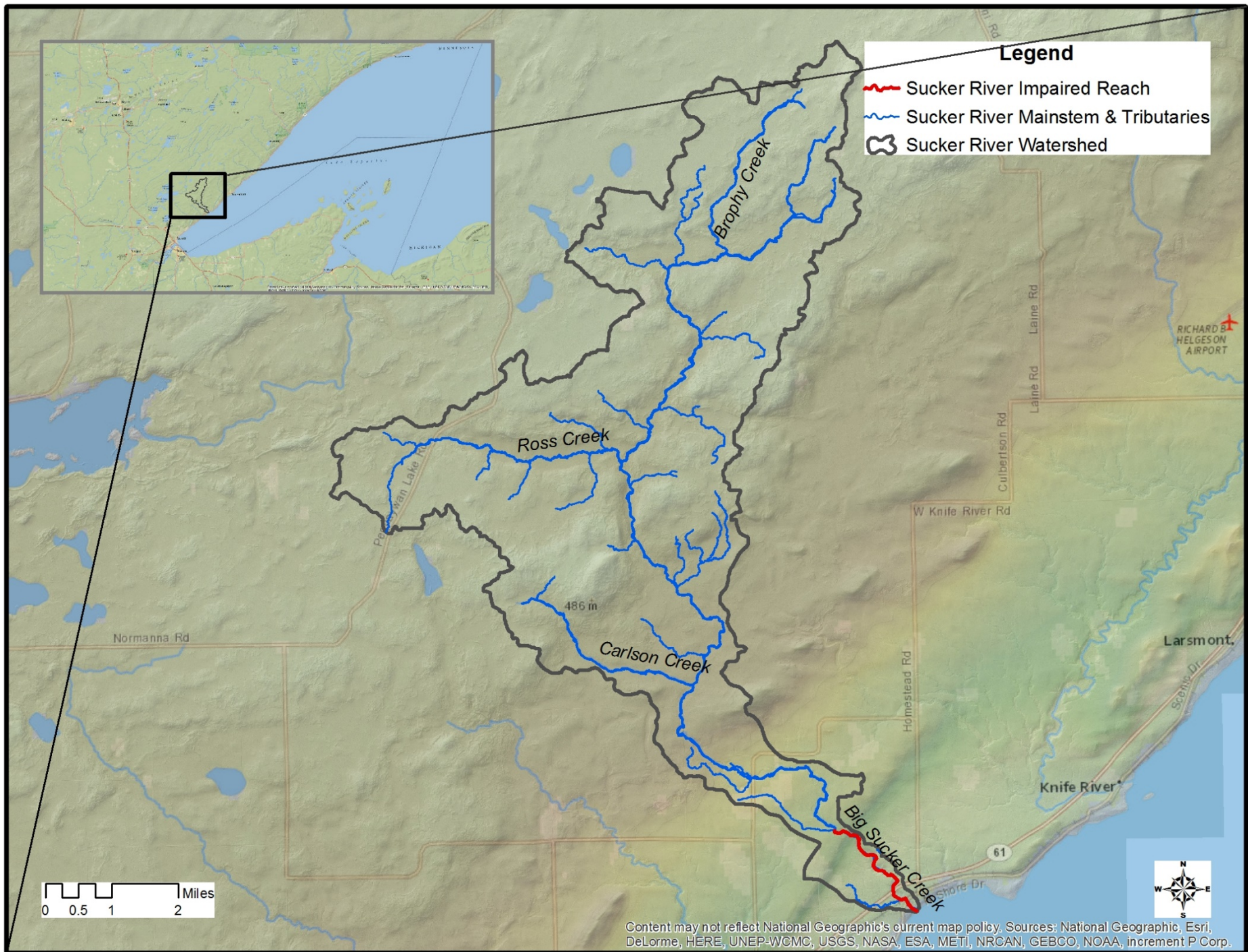


# Sucker River Draft Goal Numbers

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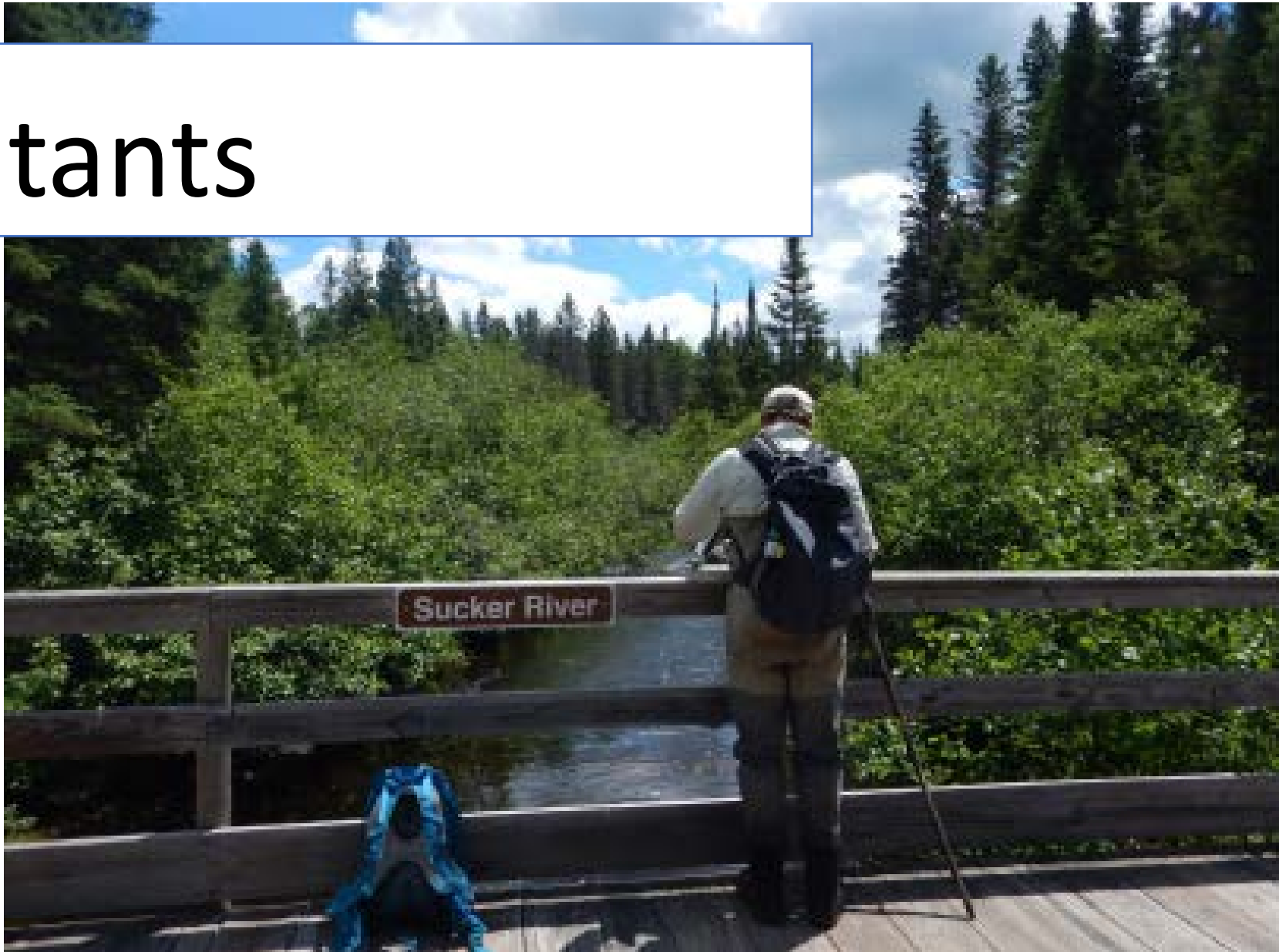
Advisory Committee



# Watershed Information

- Second Largest tributary to Lake Superior between Duluth and Two Harbors
- 37.75 square miles watershed
- 23 mile long river with 50 miles of tributaries
- Major roads in the watershed area:
  - HWY 61, McQuade, Ryan, Berguist and the Fox Farm.

# Pollutants







## Pollutants

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There is not a pollutant goal statement that applies to the Sucker River.

TSS/Sediment is addressed in altered hydrology and habitat.



# Altered Hydrology







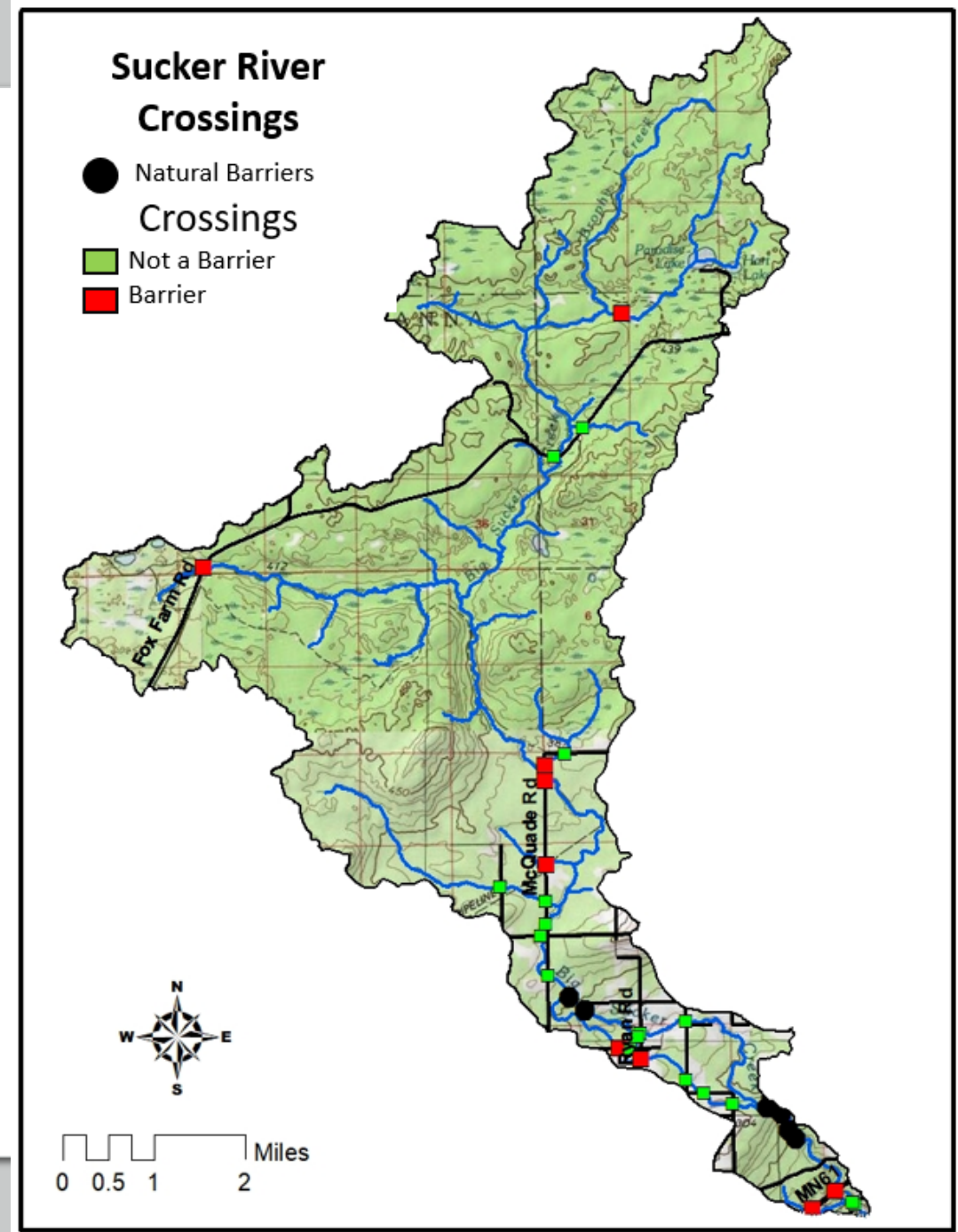
## Barriers

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Reconnect **X miles** of priority streams and tributaries to benefit aquatic life and improve water quality.

# Crossings

- Inventoried and analyzed in 2016 by SSL SWCD staff
- Data collected using the DNR data form
- Prioritized based on fish passability (width of culvert, outlet drop, sediment present)





# Highest Priority

## Main stem

Road	Score
Highway 61	145
Snowmobile Trail	250
McQuade Road	300

Addressing these 3 crossings would open up 20 miles.

## Tributaries

Stream	Road	Score
Tributary 5	McQuade Road	205
Tributary 3	Paul Road	225
Ross Creek	Pequaywan Lake Road	260
Tributary 4	McQuade Road	305
Tributary 2	Ryan Road	365

Addressing these 5 crossings would open up 6 miles.

## Draft Goal Number

- Reconnect **15 miles (based on completing 2 mainstem and 2 tributary crossings)** of priority streams and tributaries to benefit aquatic life and improve water quality.

# Notes 12/21

- Check dams in road ditches to help address altered hydrology (slow the flow).
- The Highway 61 crossing will be a very large and expensive project.



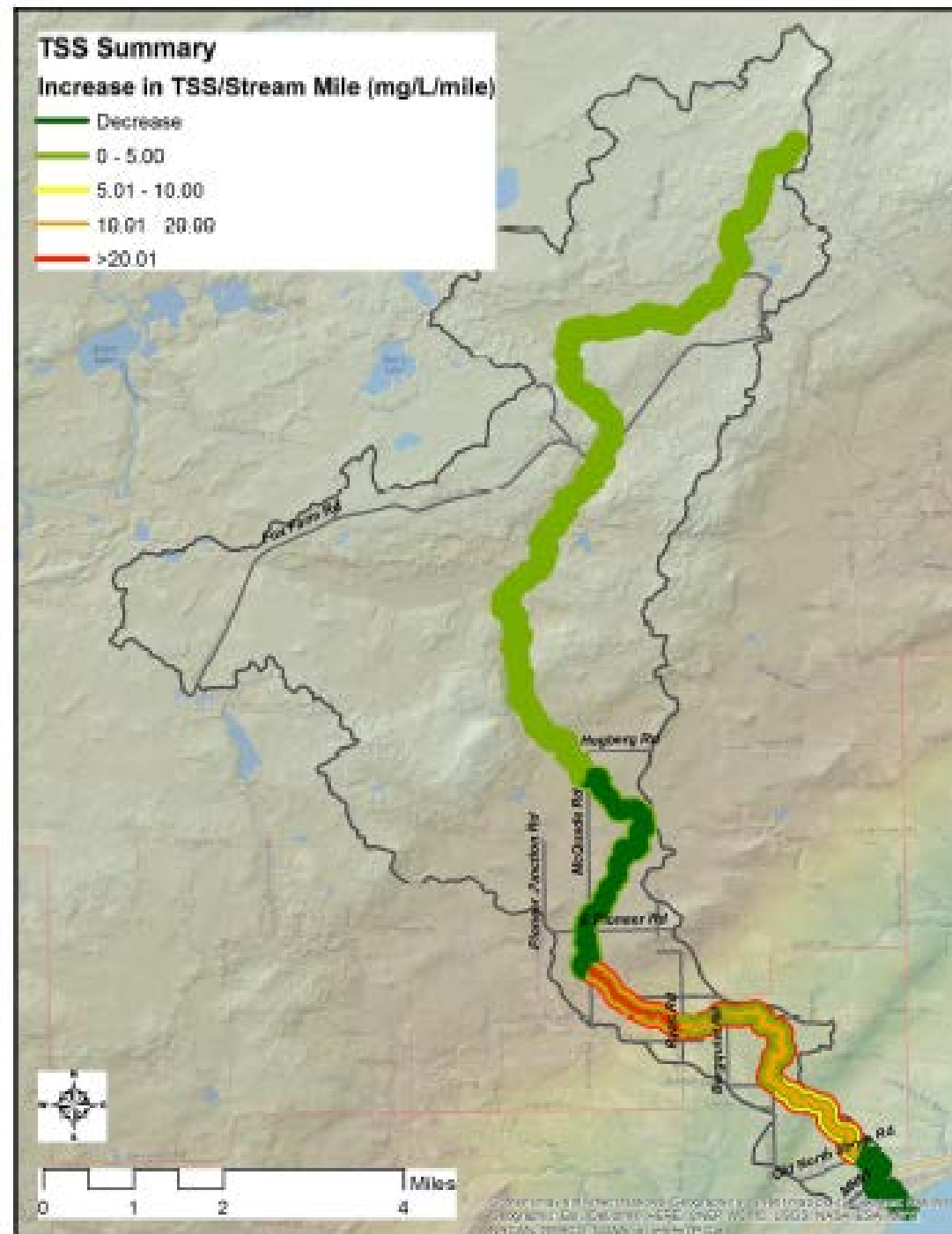
## Stream Health

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Restore stream reaches that have been altered by human activity, including impounded, straightened, and incised stream reaches on **X Linear Feet** of high priority streams and tributaries.



# What we know



# What we know

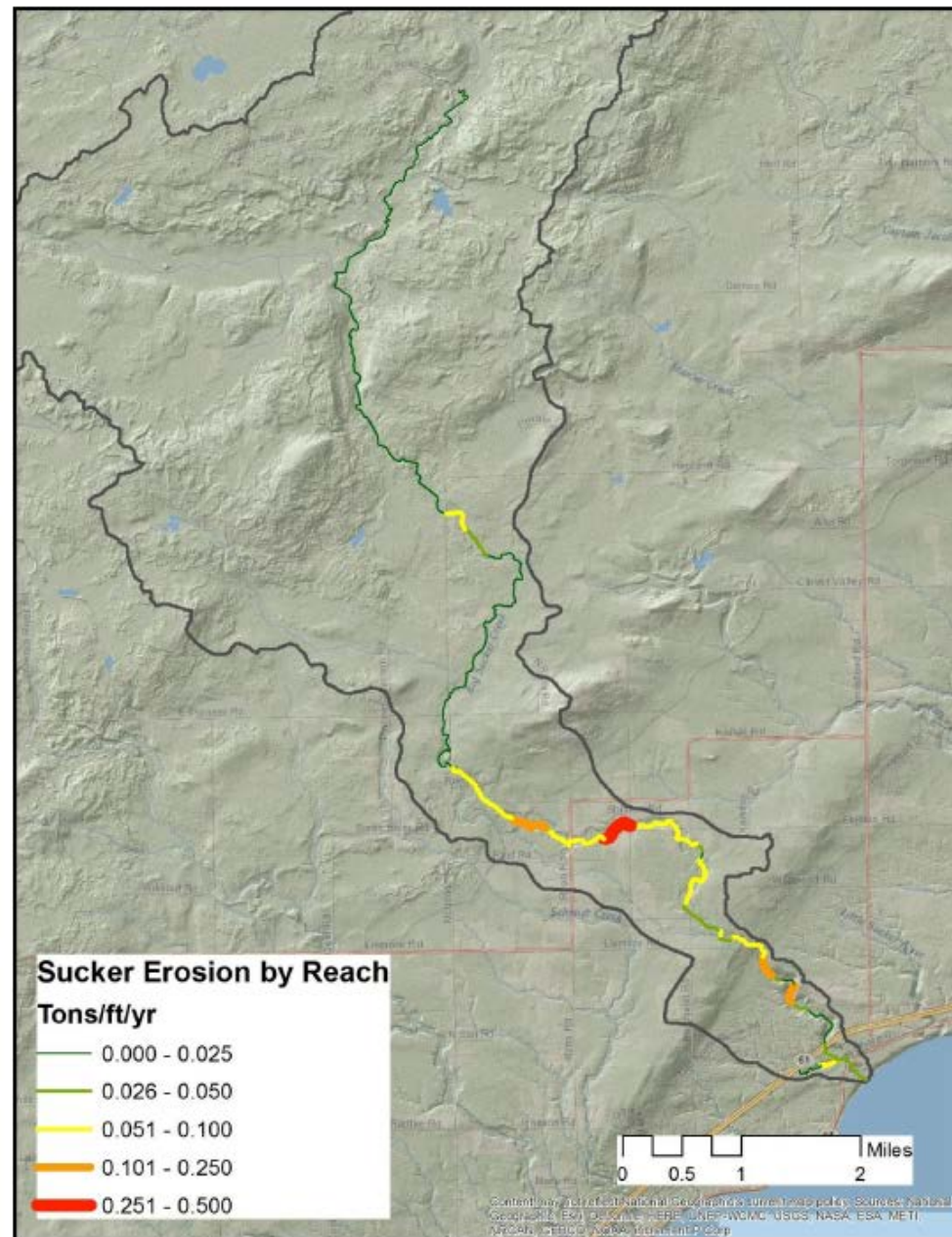


Figure 3-6: Average erosion rates per delineated reach in the Sucker River.

# What we know

The following is a list of restoration projects that were identified to reduce TSS and to fulfill holistic objectives in the watershed. In total, a little more than a mile of river is recommended for restoration/re-alignment. These projects are listed from highest priority to lowest.

**1. Reach 23 Channel Restoration**

- a. **Location:** 2,000 feet downstream of downstream-most McQuade Road crossing
- b. **Length of Proposed Restoration:** 570 feet
- c. **Sediment Reduction:** 170 tons/year
- d. **Cost Estimate:** \$100,000 - \$150,000

**2. Reach 25 and 26 Channel and Floodplain Restoration**

- a. **Location:** 2,000 feet upstream of the Ryan Road crossing
- b. **Length of Proposed Restoration:** 2,350 feet
- c. **Sediment Reduction:** 336 tons/year
- d. **Cost Estimate:** \$350,000 - \$475,000

**3. Reach 28 and 29 Channel and Floodplain Restoration**

- a. **Location:** Between the Ryan Road and Bergquist Road crossings
- b. **Length of Proposed Restoration:** 3,400 feet
- c. **Sediment Reduction:** 625 tons/year
- d. **Cost Estimate:** \$500,000 - \$700,000

**4. Reach 15 Channel and Crossing Restoration**

- a. **Location:** Downstream of the upstream-most McQuade Road crossing
- b. **Length of Proposed Restoration:** 200 feet
- c. **Sediment Reduction:** 42 tons/year
- d. **Cost Estimate:** \$30,000 - \$50,000

These four projects are estimated to cost between \$980,000 and \$1,375,000, and if implemented properly will reduce sediment loading to the Sucker River by approximately 35%. To increase the chance of success, it is recommended that projects 1, 2, and 3 be completed in order. Project 4 at Reach 15 is a stand-alone project.



This is the same  
goal as our  
“shoreland” goal

## Draft Goal

---

- Restore stream reaches that have been altered by human activity, including impounded, straightened, and incised stream reaches on **6,500 Linear Feet (based on completing 3 of the 4 priority projects)** of high priority streams and tributaries.



# Storage

## Current

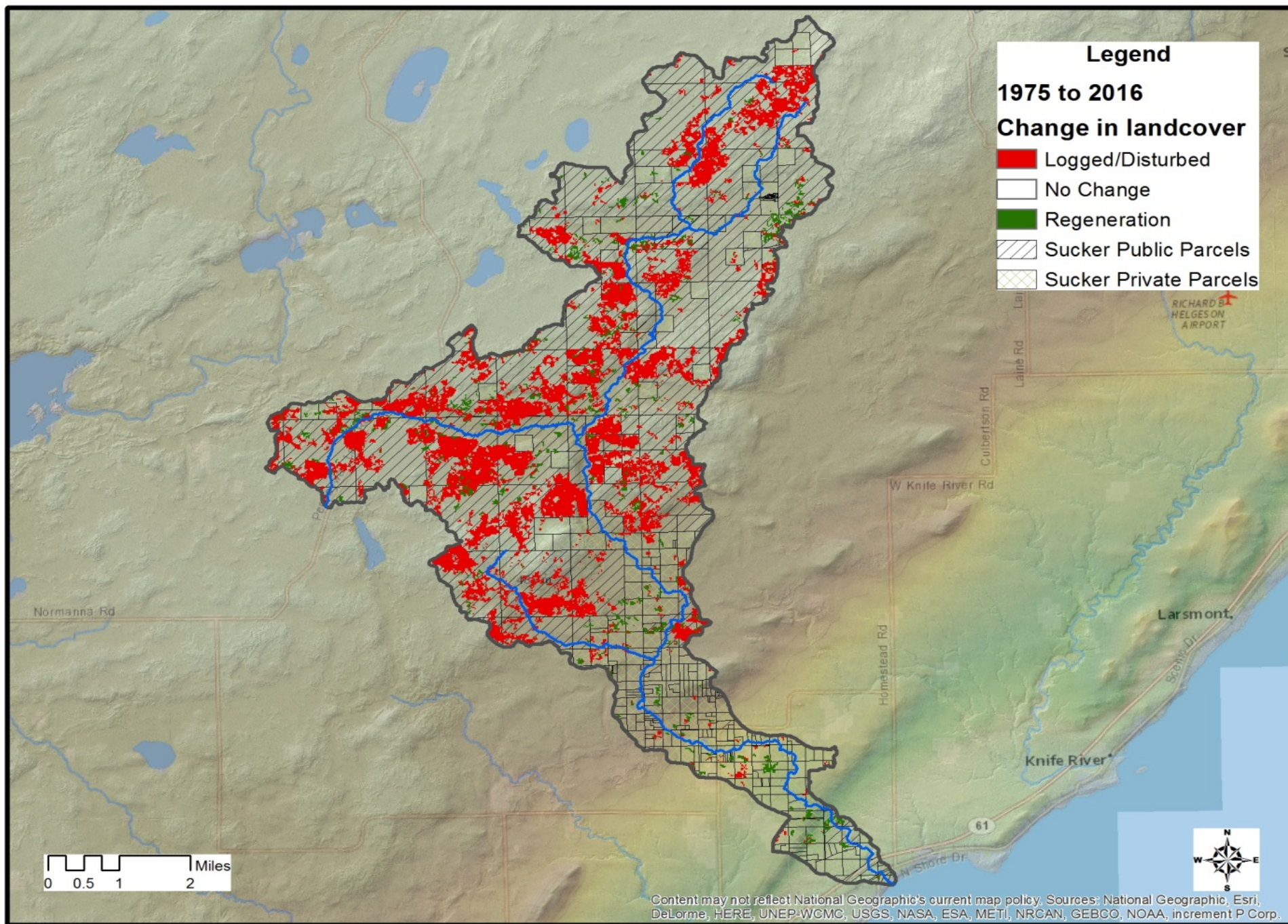
Increase **X acre/feet** of watershed storage by restoring wetlands in identified priority areas where they have been lost and/or altered due to ditching or development activities.

## Proposed Addition

Increase **X acre/feet** of watershed storage by restoring wetlands and **connecting streams to the floodplain** in identified priority areas where they have been lost and/or altered due to **land practices**, ditching or development activities.

# What we know

- Incised channels/streams not connected to the floodplain due to legacy land impacts, and current land use.



# 12/21 Notes

- The proceeding map will need to be changed if incorporated into the plan so that it matches the language we use elsewhere. Disturbed land can be interpreted as converted, and based on the knowledge of the group, the area in red is still forested.



# What we know

The following is a list of restoration projects that were identified to reduce TSS and to fulfill holistic objectives in the watershed. In total, a little more than a mile of river is recommended for restoration/re-alignment. These projects are listed from highest priority to lowest.

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# Storage

Increase **487,500 square feet (11 acres)** of watershed storage by restoring wetlands and **connecting streams to the floodplain** in identified priority areas where they have been lost and/or altered due to **land practices**, ditching or development activities.

6,500 linear feet of stream.

75 foot average floodplain width

# Notes 12/21

- Beaver can be used to add watershed storage. Consider adding education about the benefits of beaver as an action to the plan.
- New research by UMD Karen Gran Karen Gran and Josh Dumke, et al is available regarding north shore streams and beaver.
- There is controversy with this issue.





# Stream Restoration

Restore stream reaches that have been altered by human activity, including impounded, straightened, and incised stream reaches on **x linear feet** of high priority streams and tributaries.

# What we know

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This is the same goal  
as our “shoreland”  
and “stream health”  
goal

# Draft Goal Number

---

Restore stream reaches that have been altered by human activity, including impounded, straightened, and incised stream reaches on **6,500 Linear Feet (based on completing 3 of the 4 priority projects)** of high priority streams and tributaries.

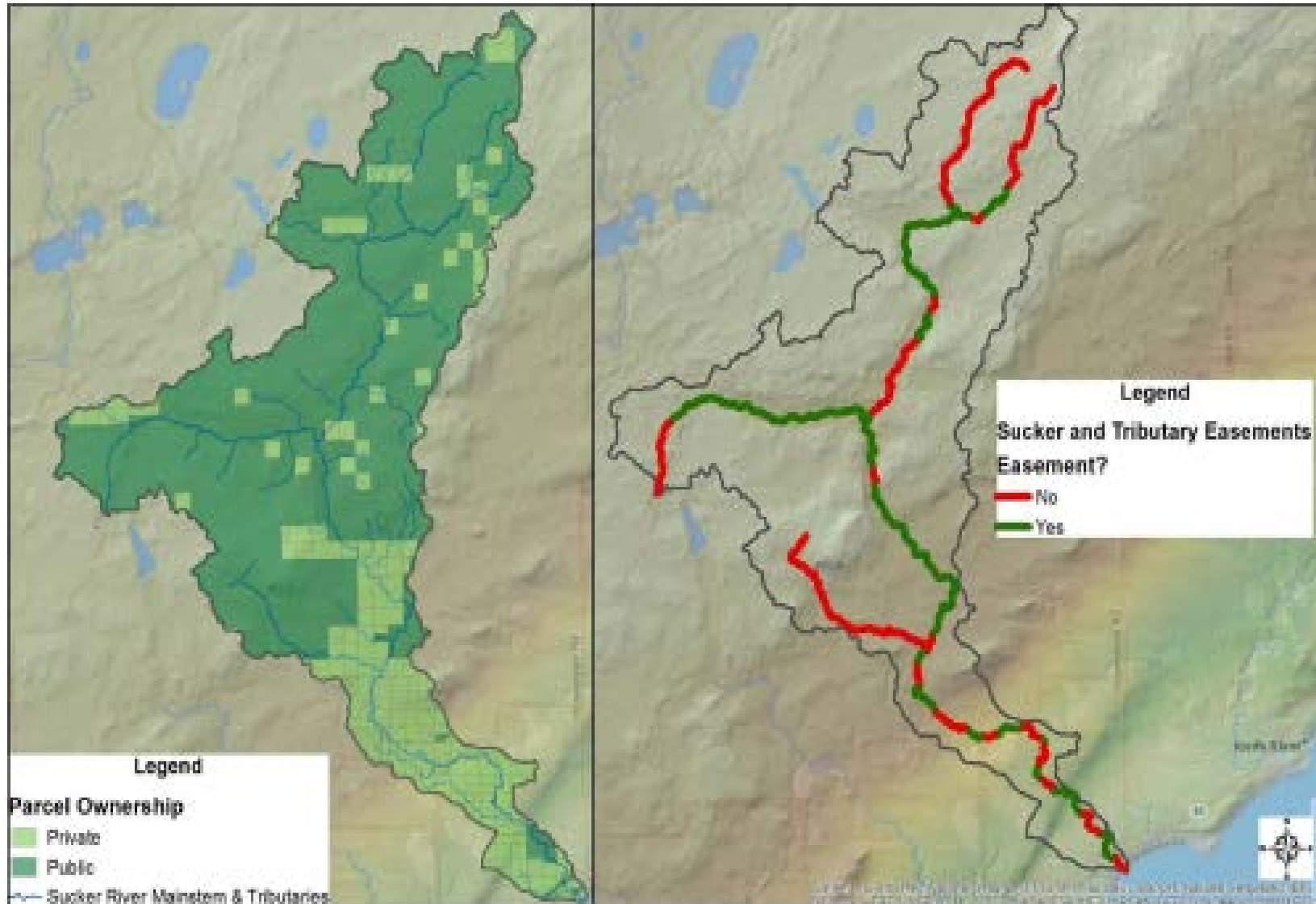


## Habitat

Protect & manage  
**X acres** of private  
owned forests in  
areas that protect  
surface water,  
drinking/ground  
water quality and  
riparian habitat.

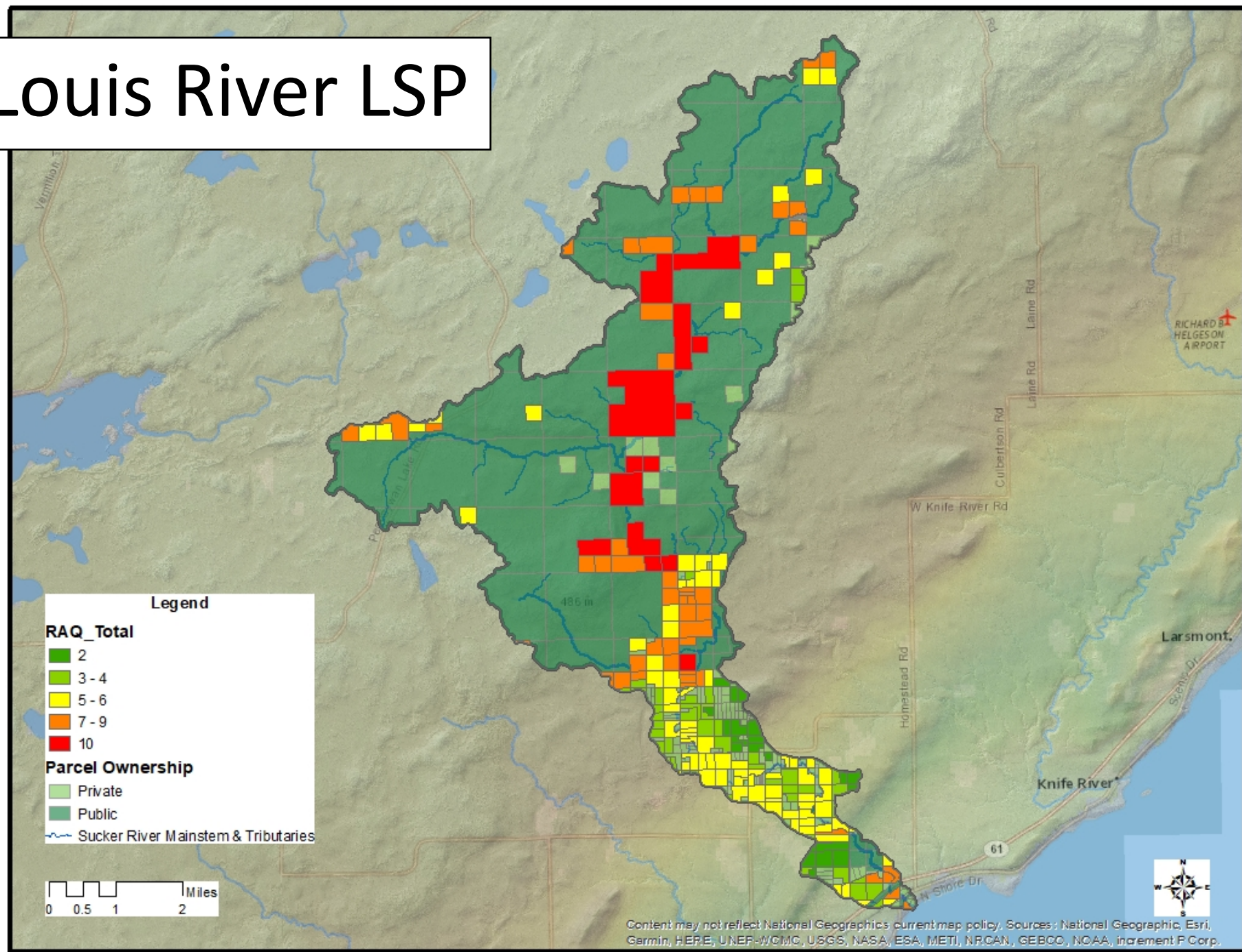


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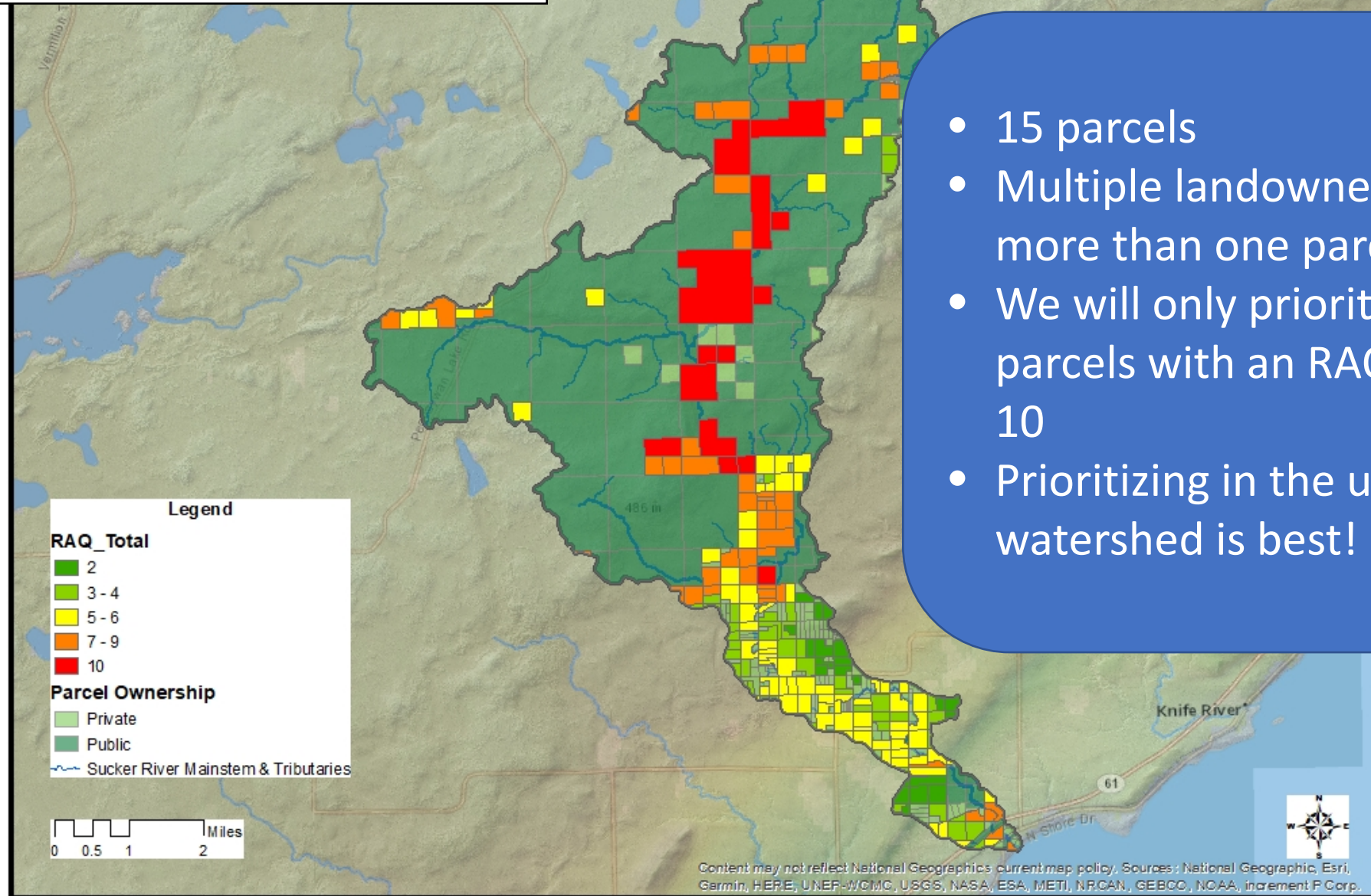


# St. Louis River LSP





# St. Louis River LSP



- 15 parcels
- Multiple landowners own more than one parcel
- We will only prioritize parcels with an RAQ total of 10
- Prioritizing in the upper watershed is best!

# Habitat

Protect & manage  
**2050 acres** of private  
owned forests in areas  
that protect surface  
water, drinking/ground  
water quality and  
riparian habitat.





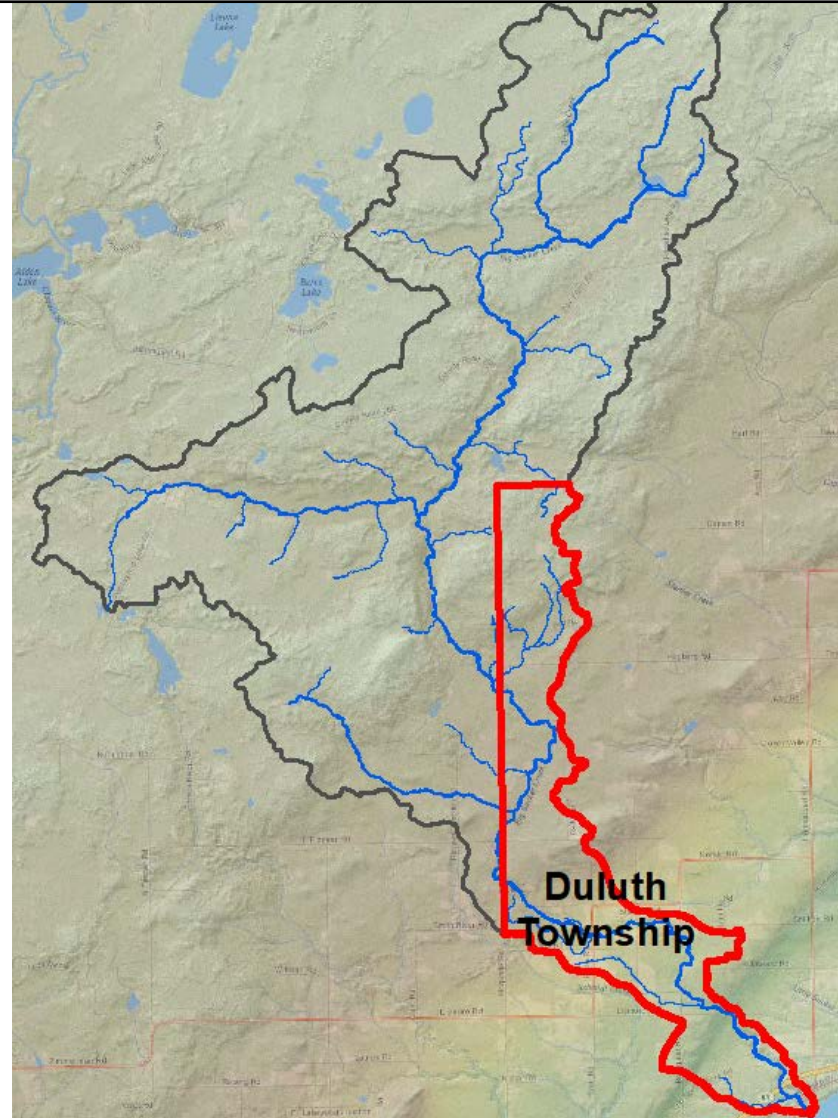


# Shoreline Ordinances

Shoreline ordinances are updated, developed, and enforced for **X %** of municipalities with priority resource shoreline areas.



# Municipalities in the Watershed





# Shoreline Ordinances

Shoreline ordinances are updated, developed, and enforced for **100 %** of municipalities with priority resource shoreline areas.

# Notes 12/21

- Consider implementing a tax incentive program like what is being done in Burnett County Wisconsin.
- Work on a Sustainable Shoreland Incentives Act is in the works that would reward landowners for protecting their shore (similar to SFIA).
- Implementing a Visual Preference study with landowners could be a good education tool.





# Shoreland

**x acres** of shoreline in prioritized lakes and streams have natural buffers and near shore areas are protected and restored to reduce erosion using bank stabilization, bioengineering, etc. techniques.

# What We Know

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and “stream  
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## Draft Goal

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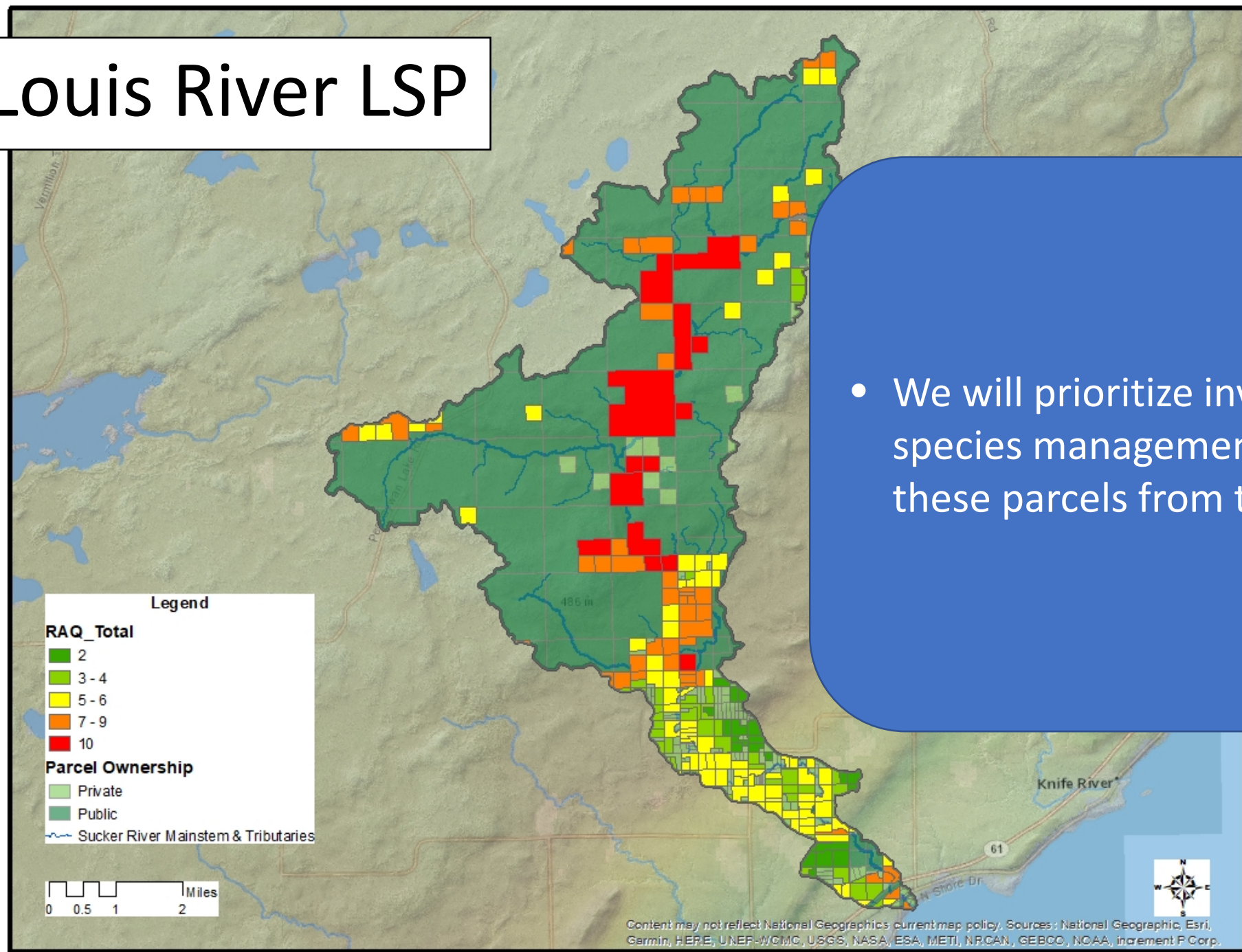




# Invasive

Identify and manage **X %** of high priority sites/resources for invasive species.

# St. Louis River LSP



## Draft Goal

- Identify and manage 70 % (10 of the 15 parcels with an RAQ of 10) of high priority sites/resources for invasive species.



# Notes 12/21

- The group requested hearing the invasive species concerns for this area. We are assuming they are EAB, but we wanted to check.