

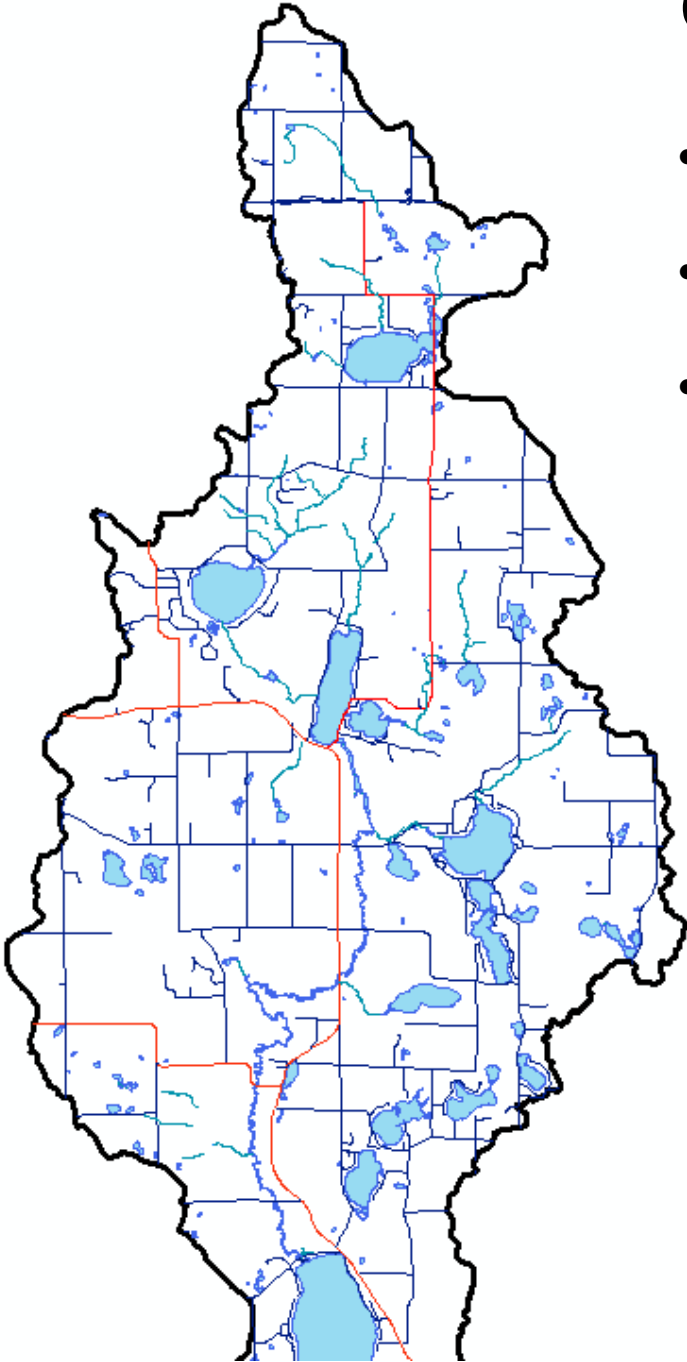
Horse Creek Stream Digitization

By: Colton Sorensen
Eric Wojchik



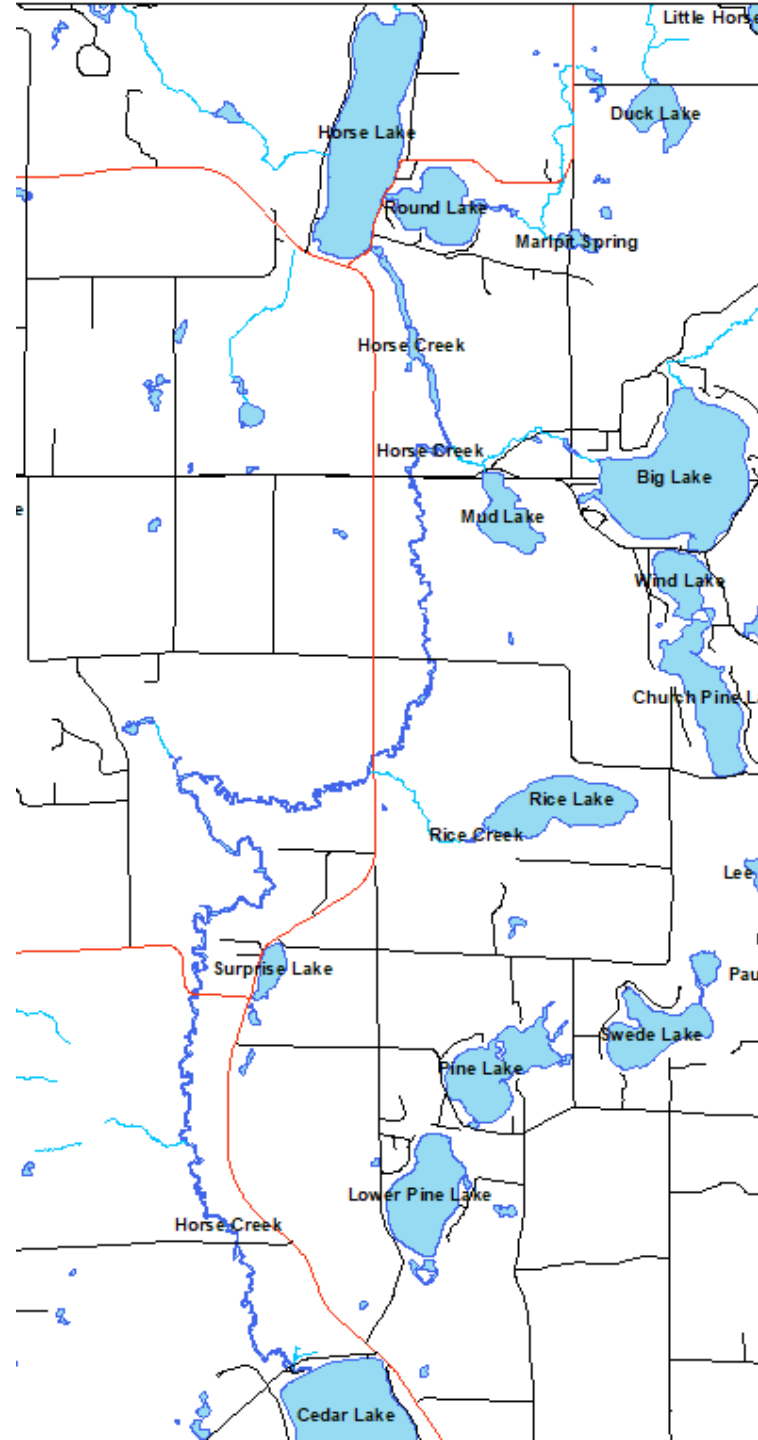
Cedar Lake Watershed

- A watershed is the area of land that drains to a specific waterbody.
- Within the black line is the watershed for Cedar Lake.
- A majority of this watershed will eventually travel through Horse Creek entering Cedar Lake.



Horse Creek

- Horse Creek was digitized from the outlet of Horse Lake to the inlet of Cedar Lake. This also includes the tributary's entering the stream. This was done by the Polk County Land and Water Resources Department.
- Horse Creek receives constant flow from Horse Lake (Which receives constant flow from Lotus lake), Big Lake, Mud Lake, and Rice Lake.



Reasoning for Digitization

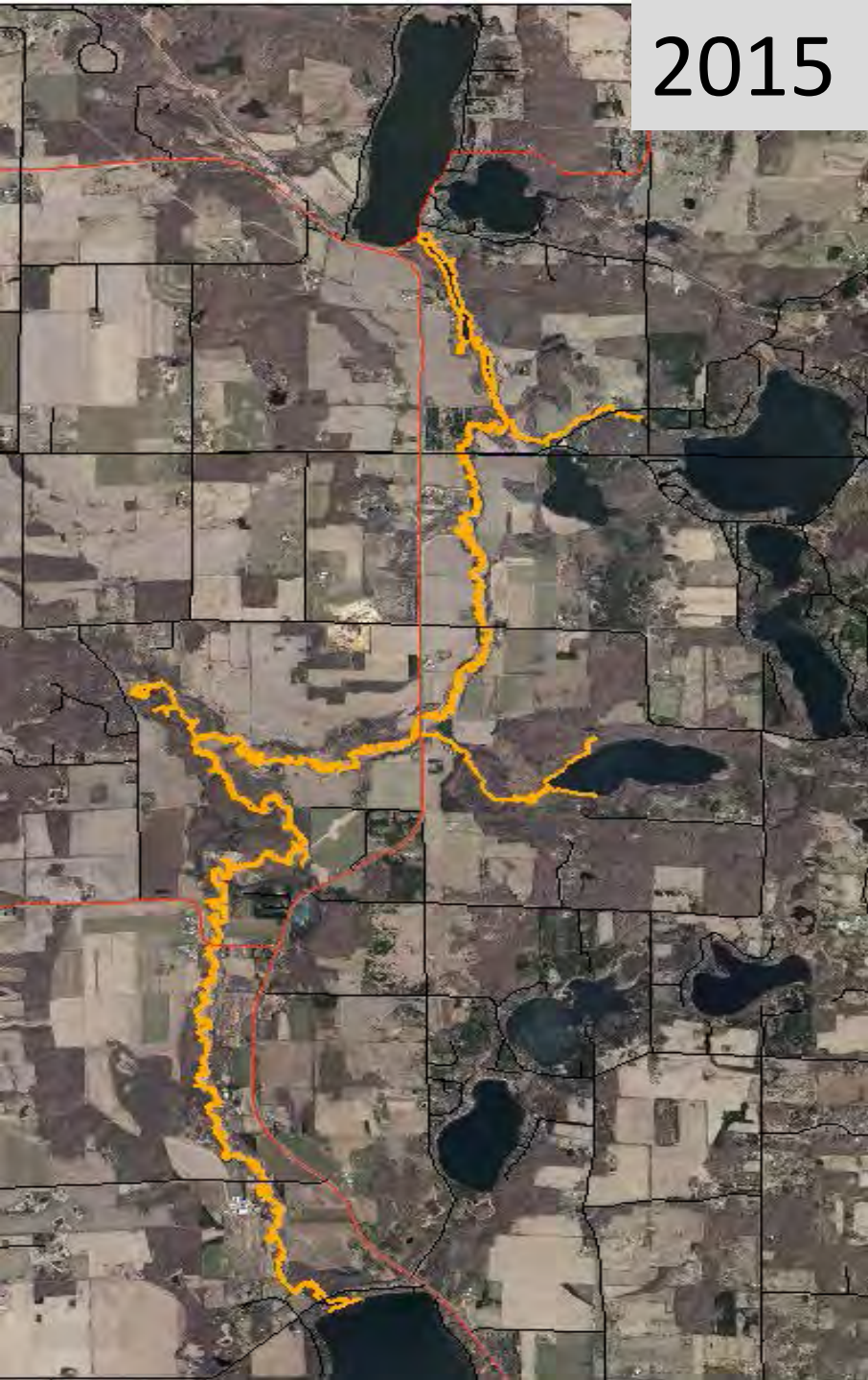
- In 2017 the Polk County Land and Water Resources Department was contacted by concerned citizens about sediment accumulating on the north end of Cedar Lake.
- In 2018 the problem was becoming more apparent, there were actions taken by the department to investigate the issue.
- A fly over of the stream by plane was done not finding any obvious concerns.



Reasoning for Digitization

- The sediment accumulation has continued annually.
- Theory was that this is a natural process and changes in flow path could be contributing to the problem.
- The spring of 2020 Polk County LWRD conducted a paddle of the river from Horse Lake to Cedar Lake looking for areas of concern.
- During the spring it was decided to digitize the stream with the 2015 aerial photo. In late 2020 the county received the aerial imagery from the spring of 2020. This was digitized as well, the 2015 stream path was over laid on the 2020 aerial photo and was analyzed for changes in the flow network. The following photos in the presentation are changes in the flow path.

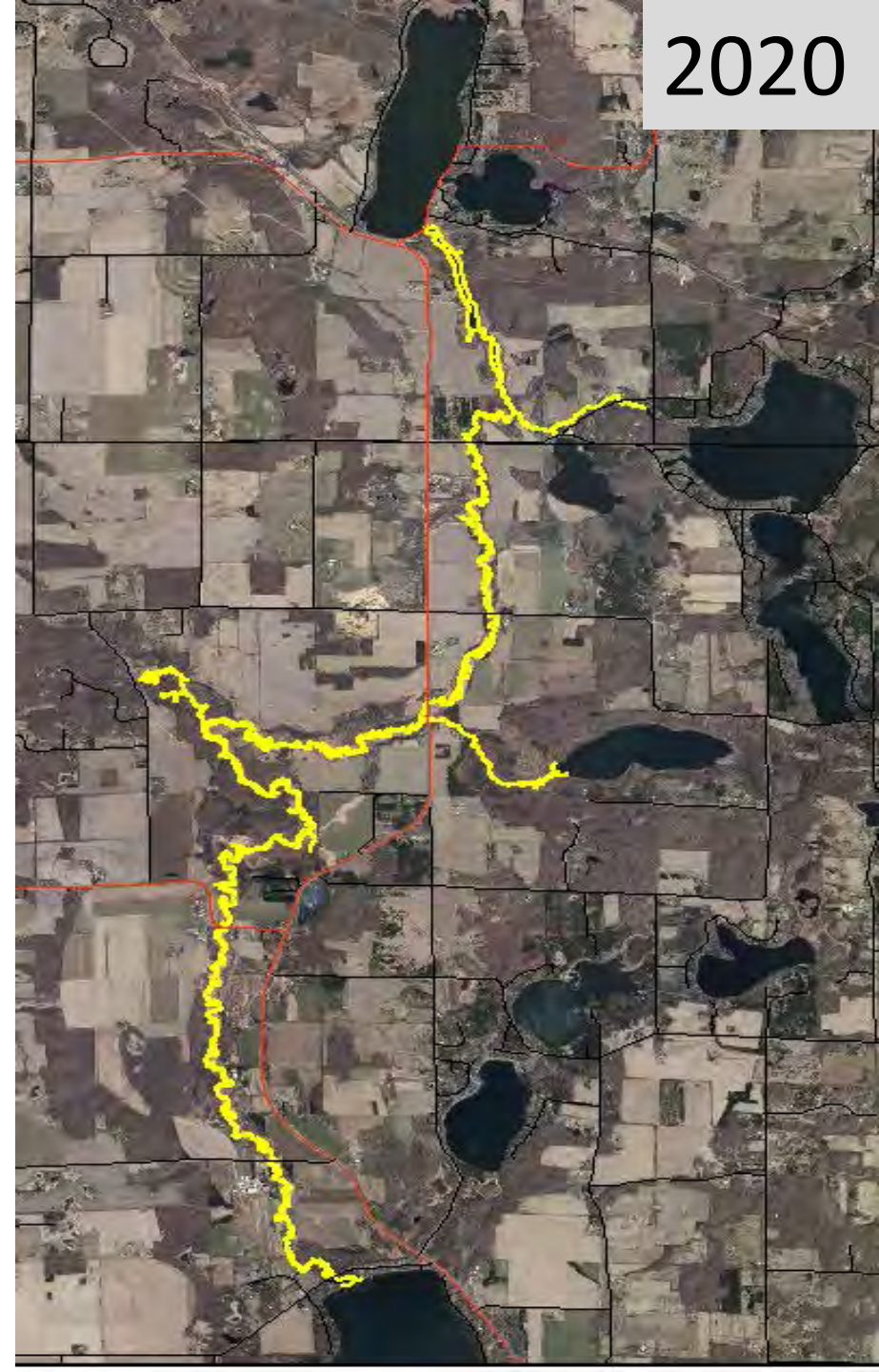
2015

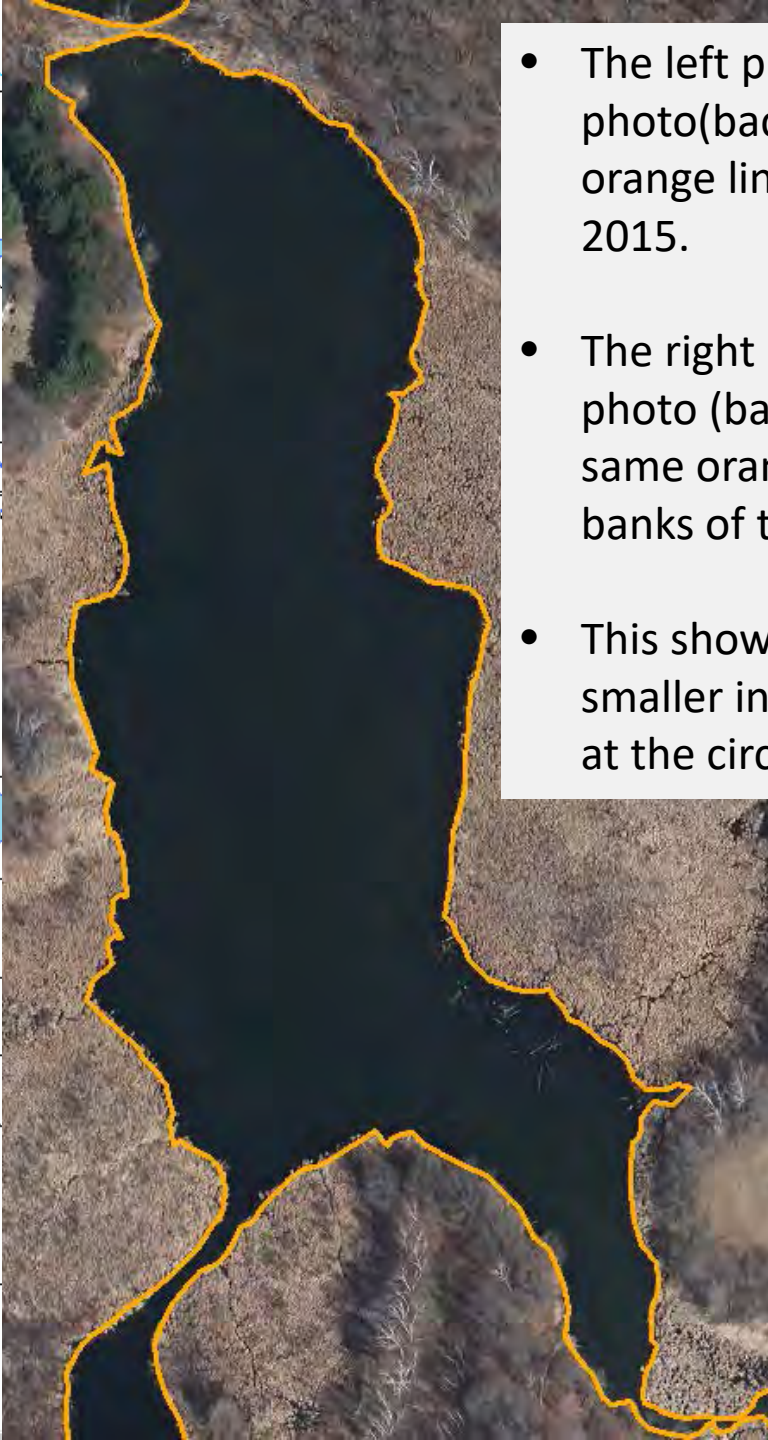
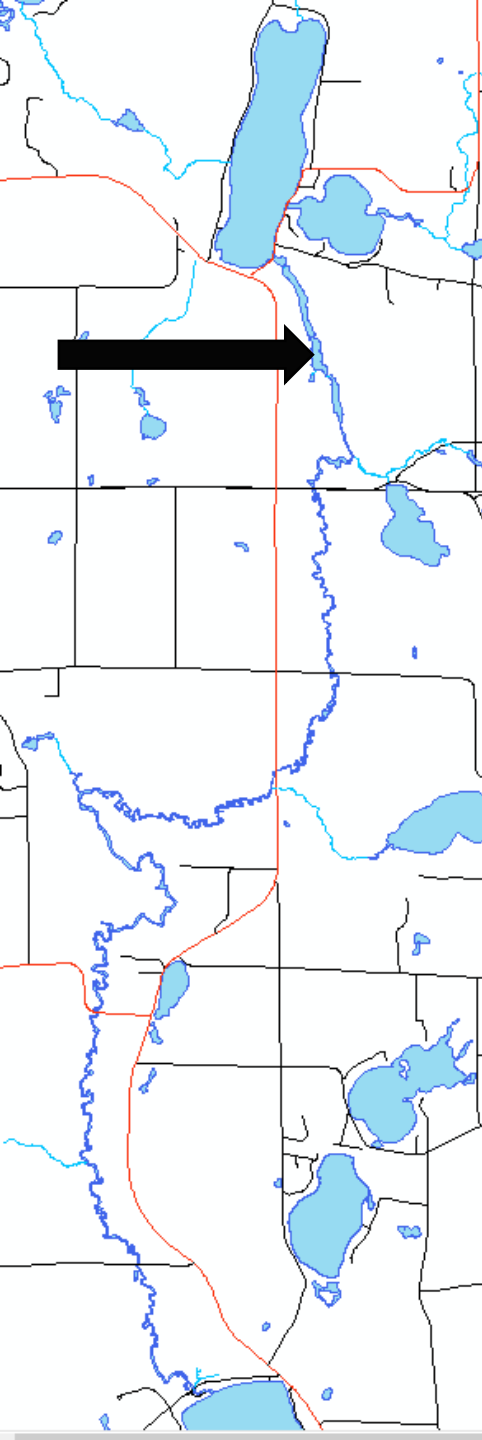


Important Notes to Consider

- The orange and yellow lines depict digitized flow paths.
- The main tributary's entering the stream were also digitized.
- 2015 aerial photo will always be on the left and 2020 will be on the right
- All side by side comparison photos are at the same scale.
- Each of the following slides show significant changes in the flow path.

2020

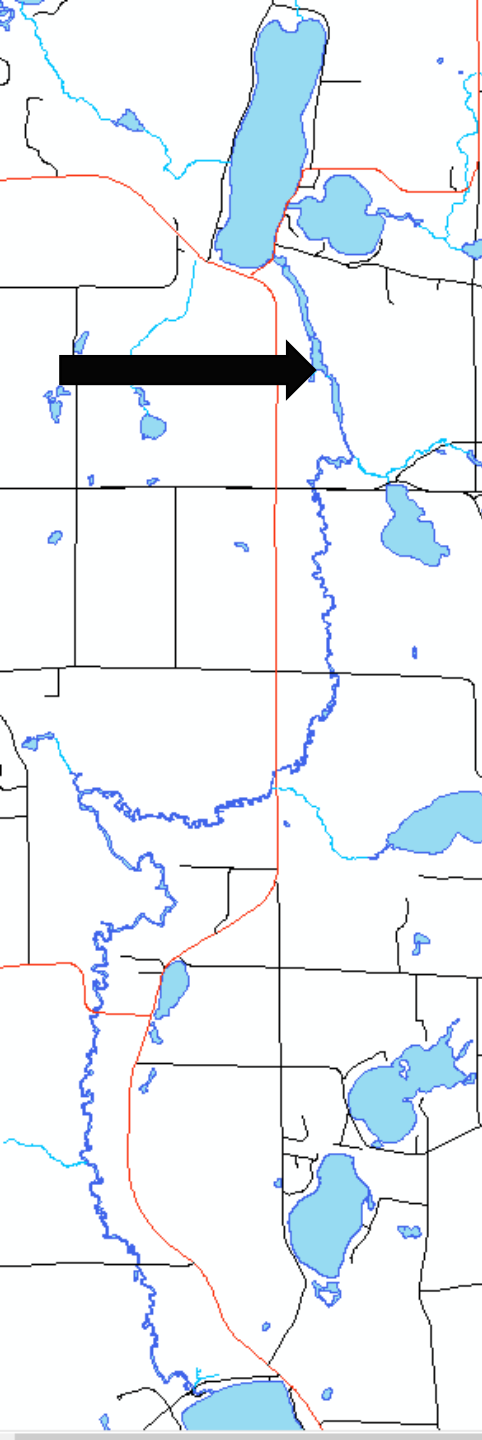




- The left photo is the 2015 aerial photo(background image) with the orange line being the waters edge in 2015.
- The right photo is the 2020 aerial photo (background image) with the same orange line located where the banks of the stream were in 2015.
- This shows that the channel has gotten smaller in the last 5 years. Specifically at the circled areas.

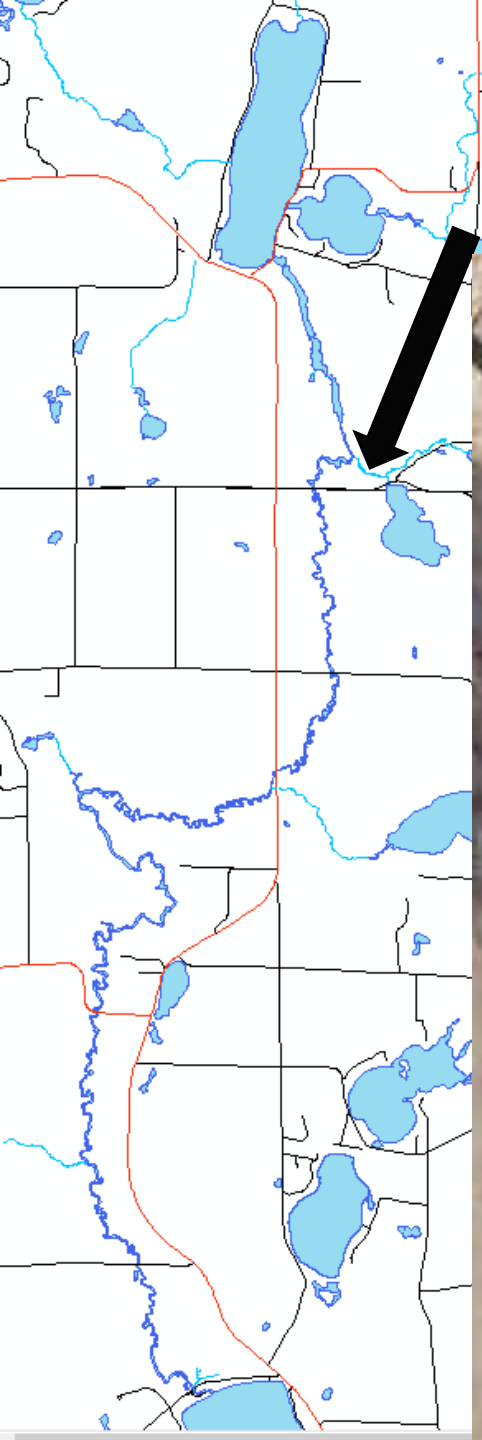


2015 Aerial



2020 Aerial





2015 Aerial



2020 Aerial





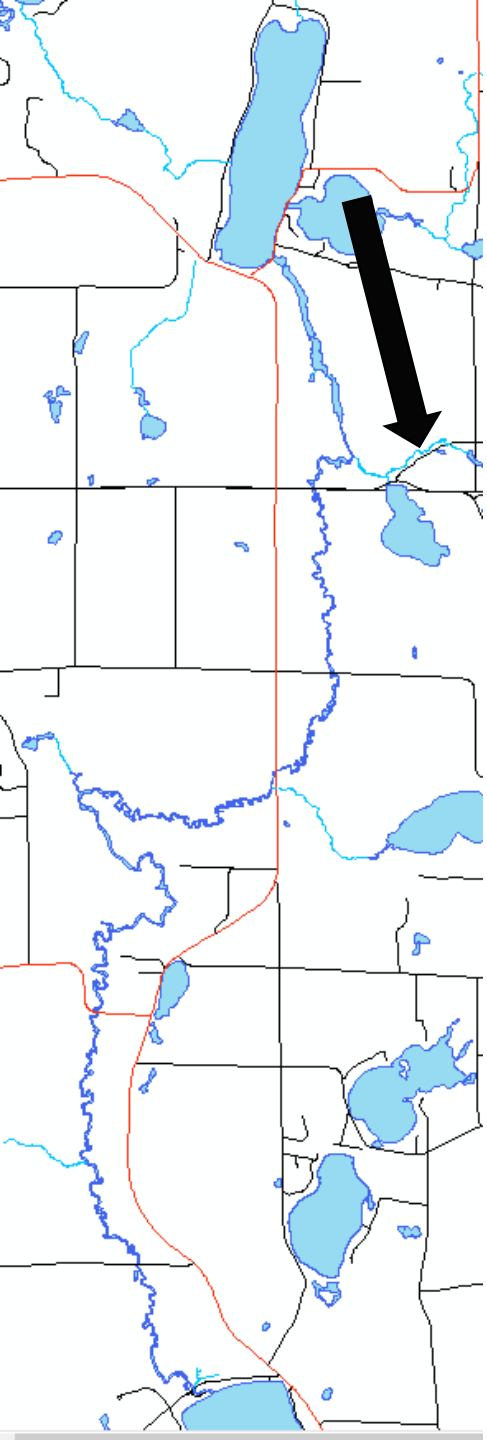
2015 Aerial



2020 Aerial



2015 Aerial



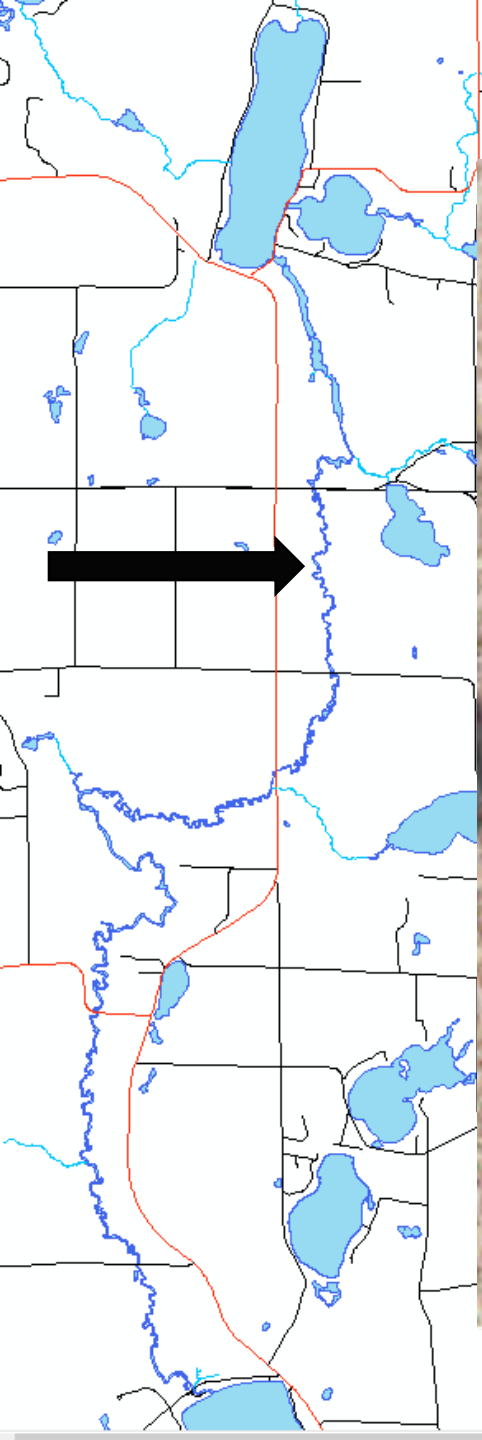
2020 Aerial

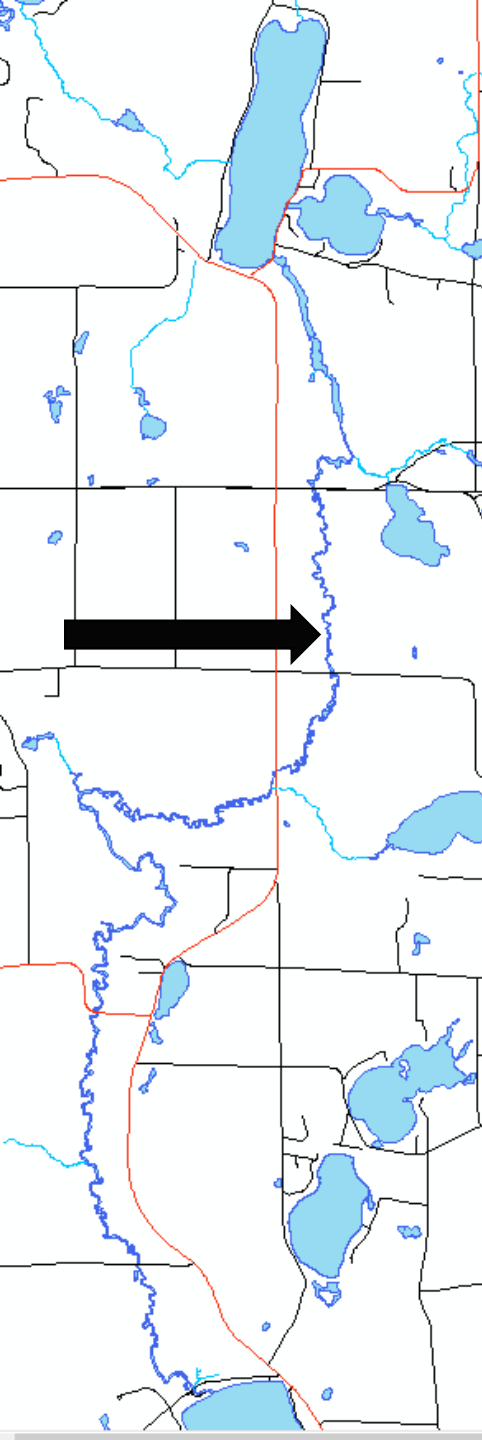


2015 Aerial



2020 Aerial





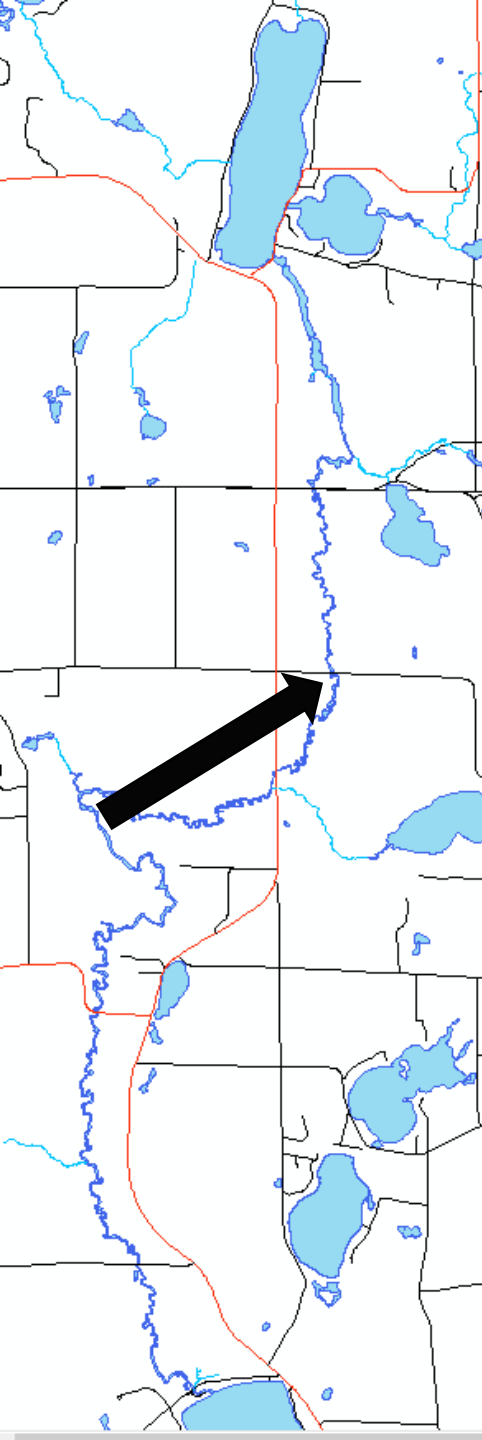
2015 Aerial



2020 Aerial



**2015 Aerial with 2015
waterline (Orange)**



**2020 Aerial with 2015
waterline (Orange)**



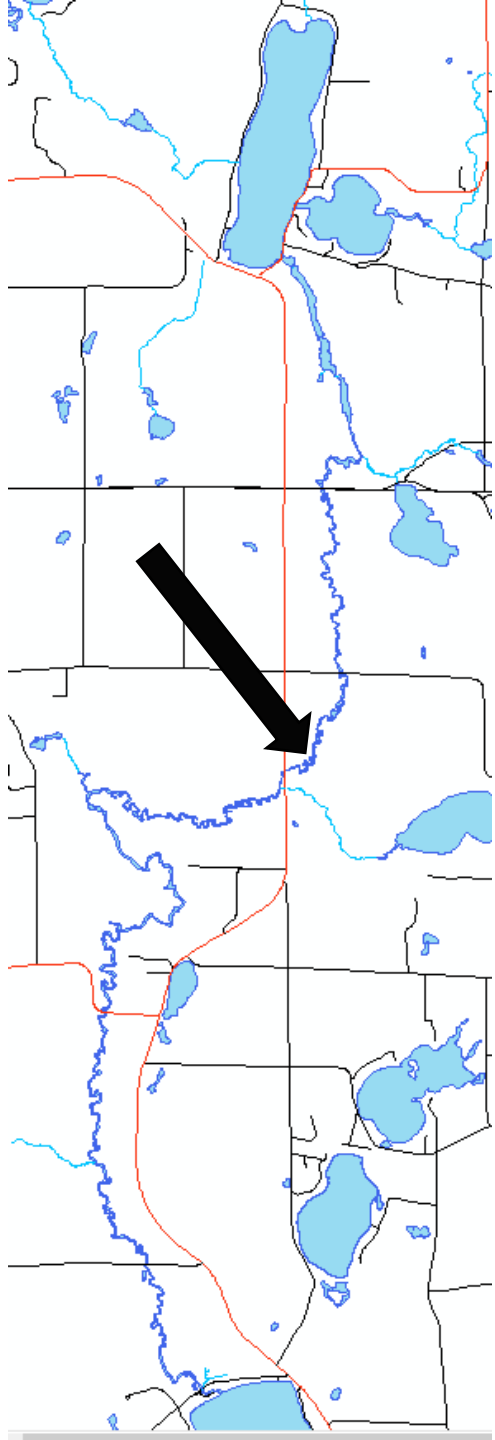


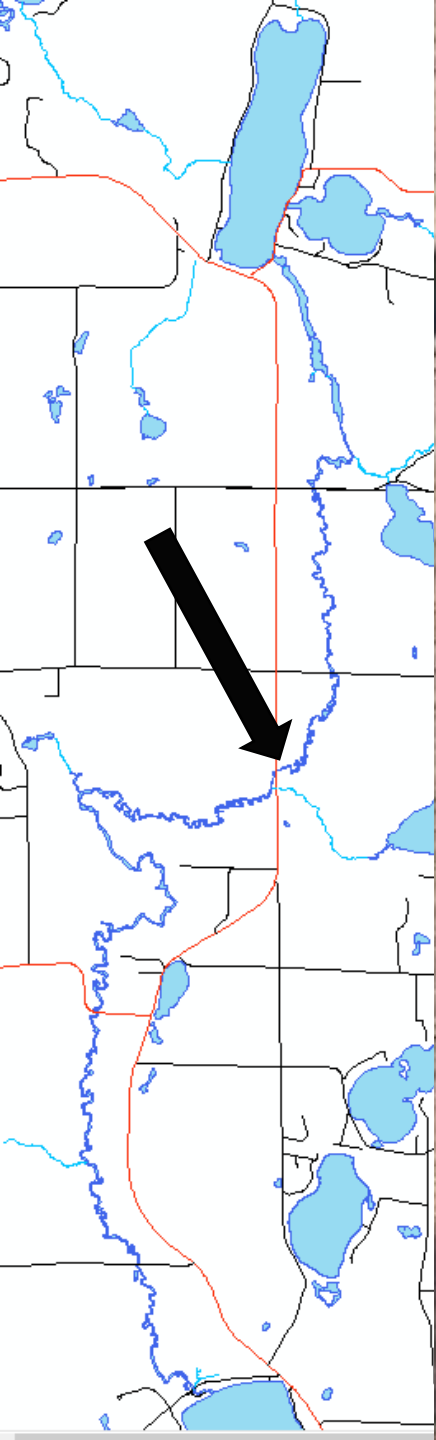
2015 Aerial



2020 Aerial





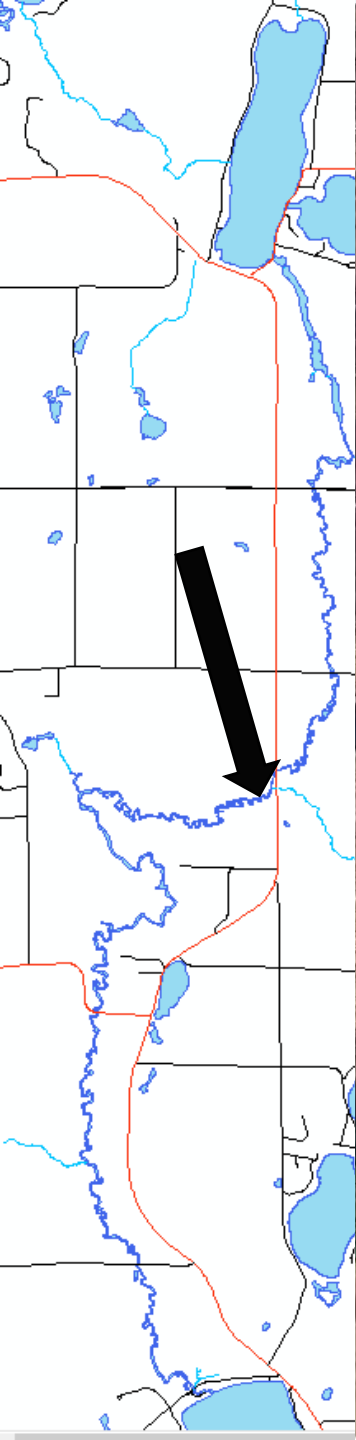


2015 Aerial



2020 Aerial





2015 Aerial



2020 Aerial



2015 Aerial



2020 Aerial

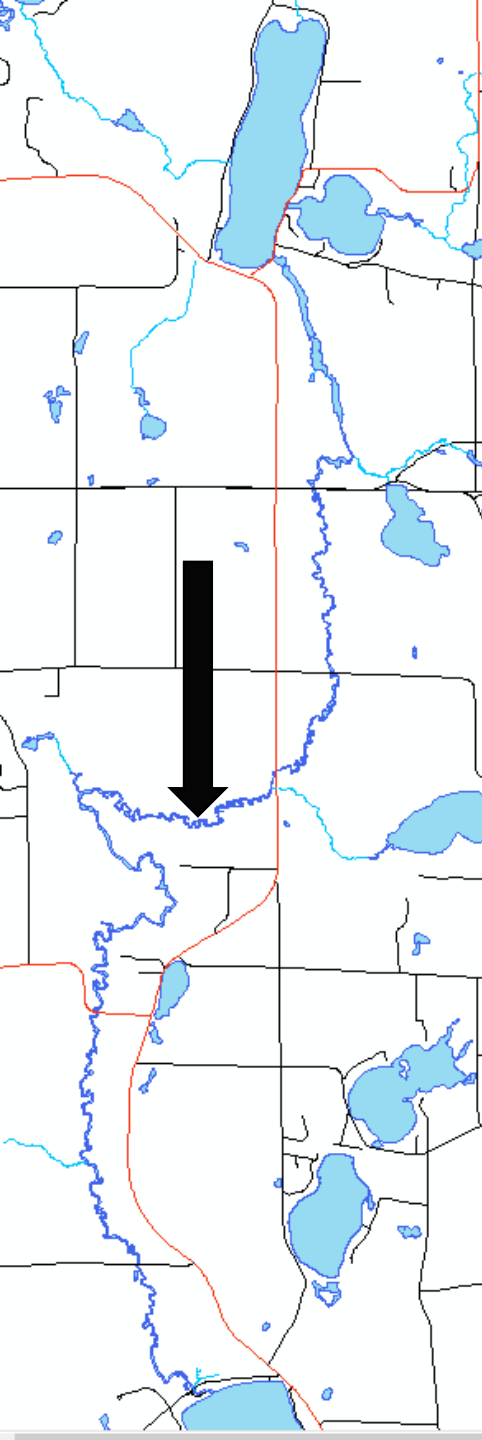


2015 Aerial



2020 Aerial





2015 Aerial



2020 Aerial





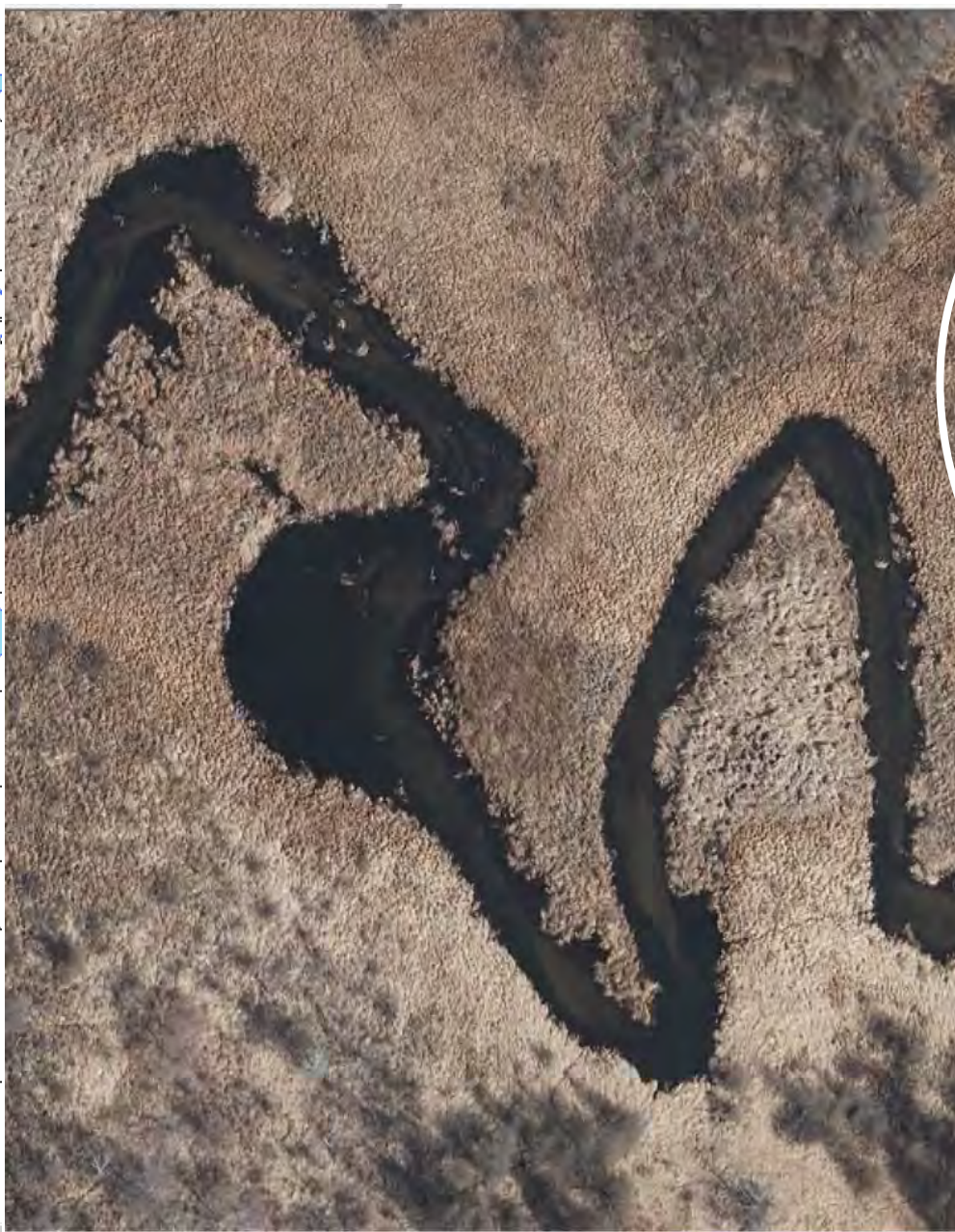
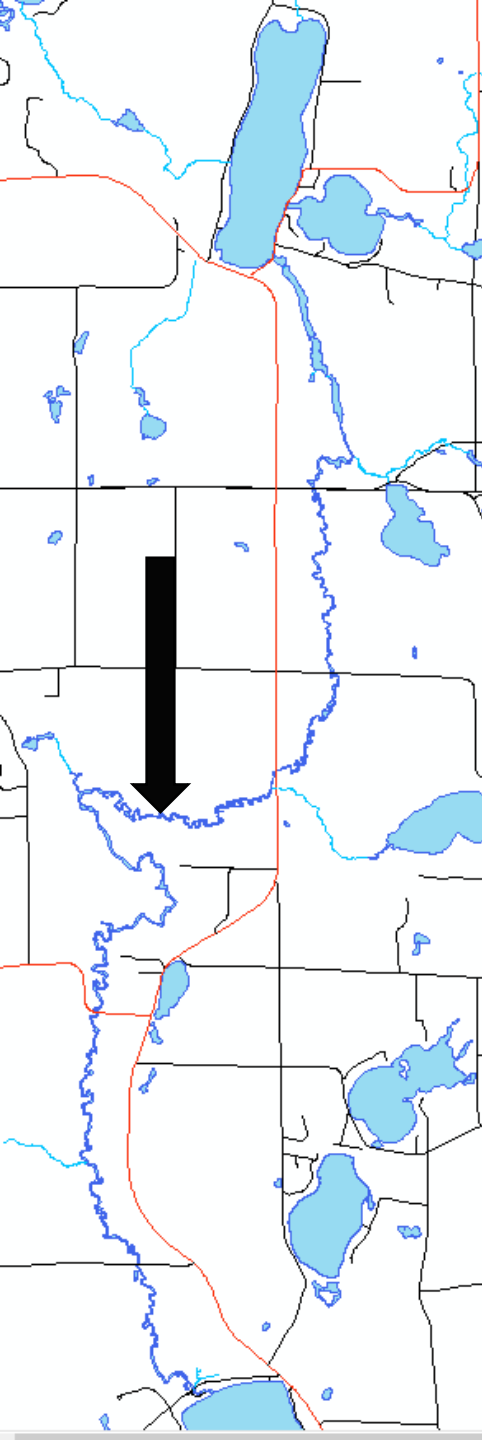
2015 Aerial



2020 Aerial

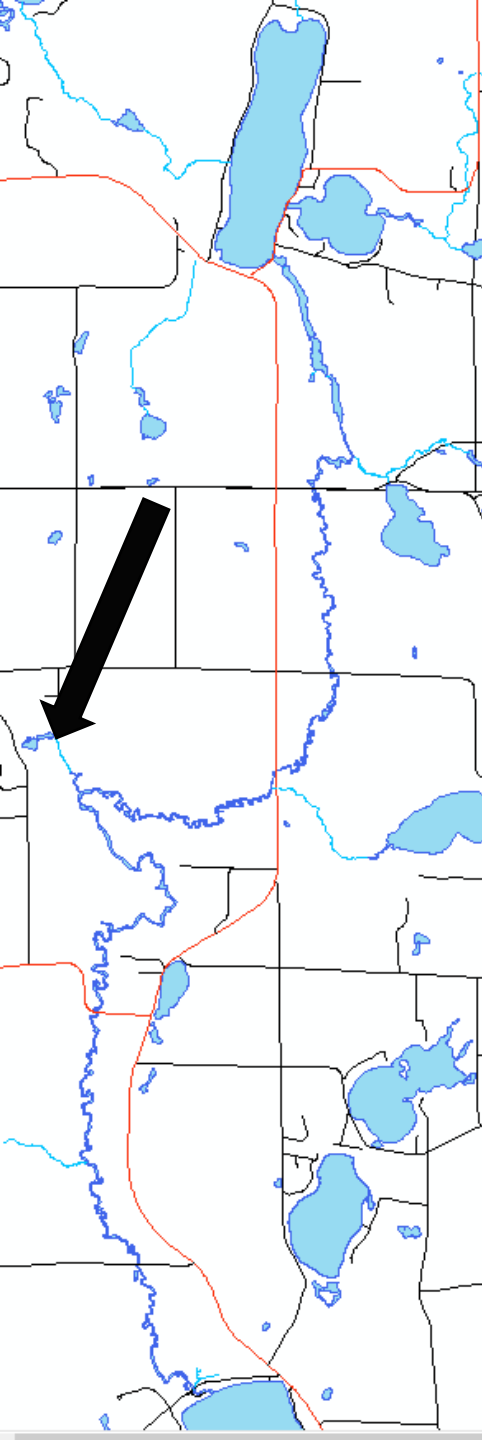


2015 Aerial



2020 Aerial







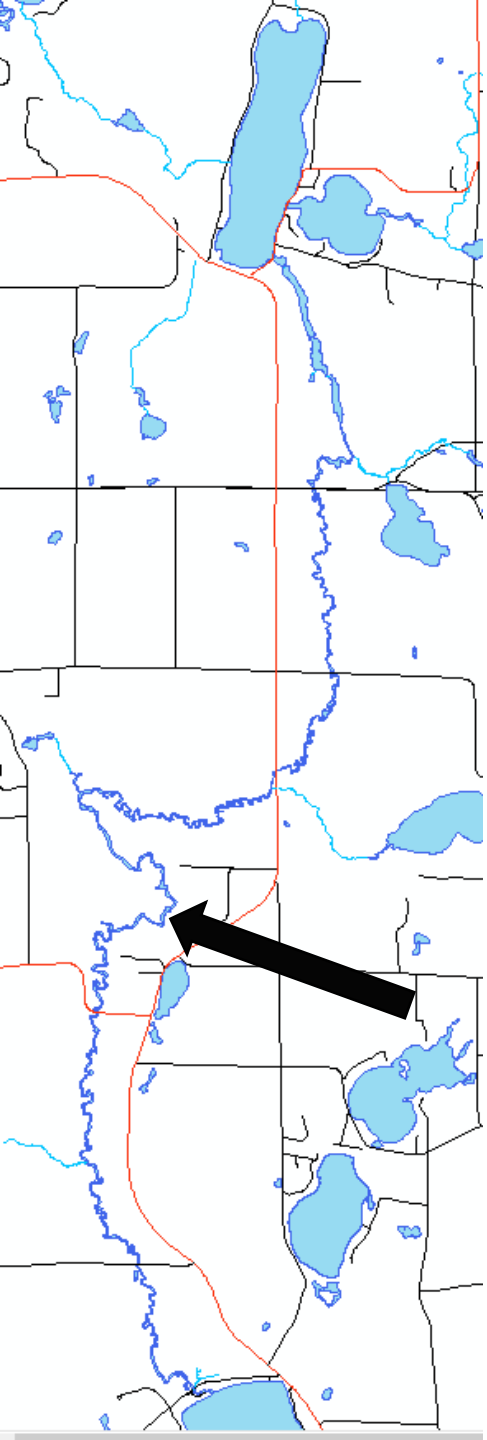


2015 Aerial



2020 Aerial





2015 Aerial



2020 Aerial

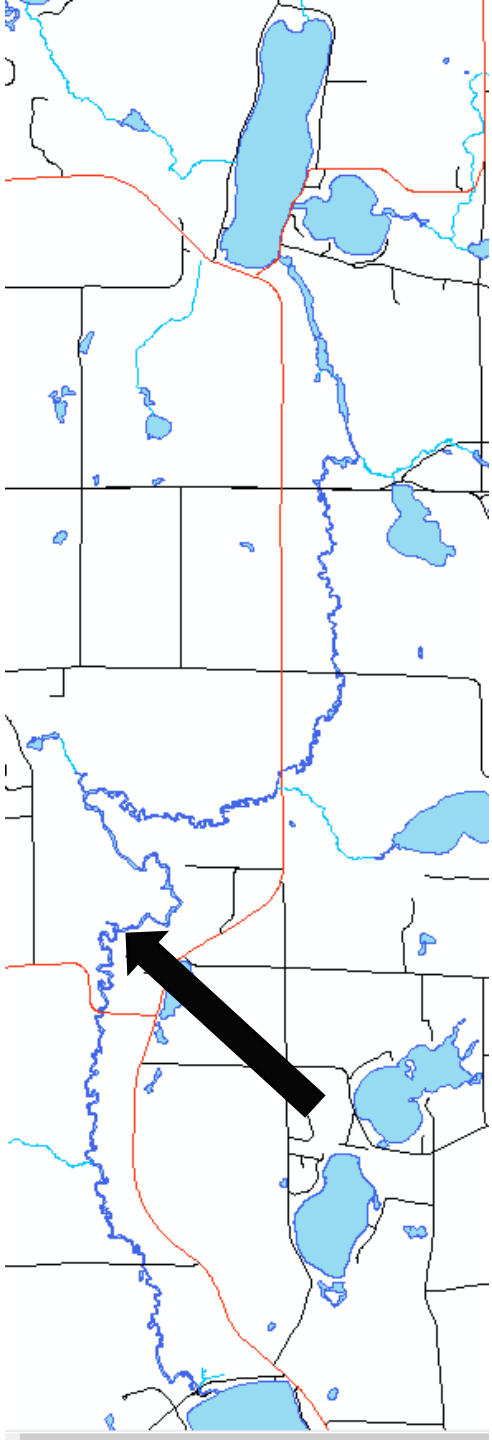


2015 Aerial

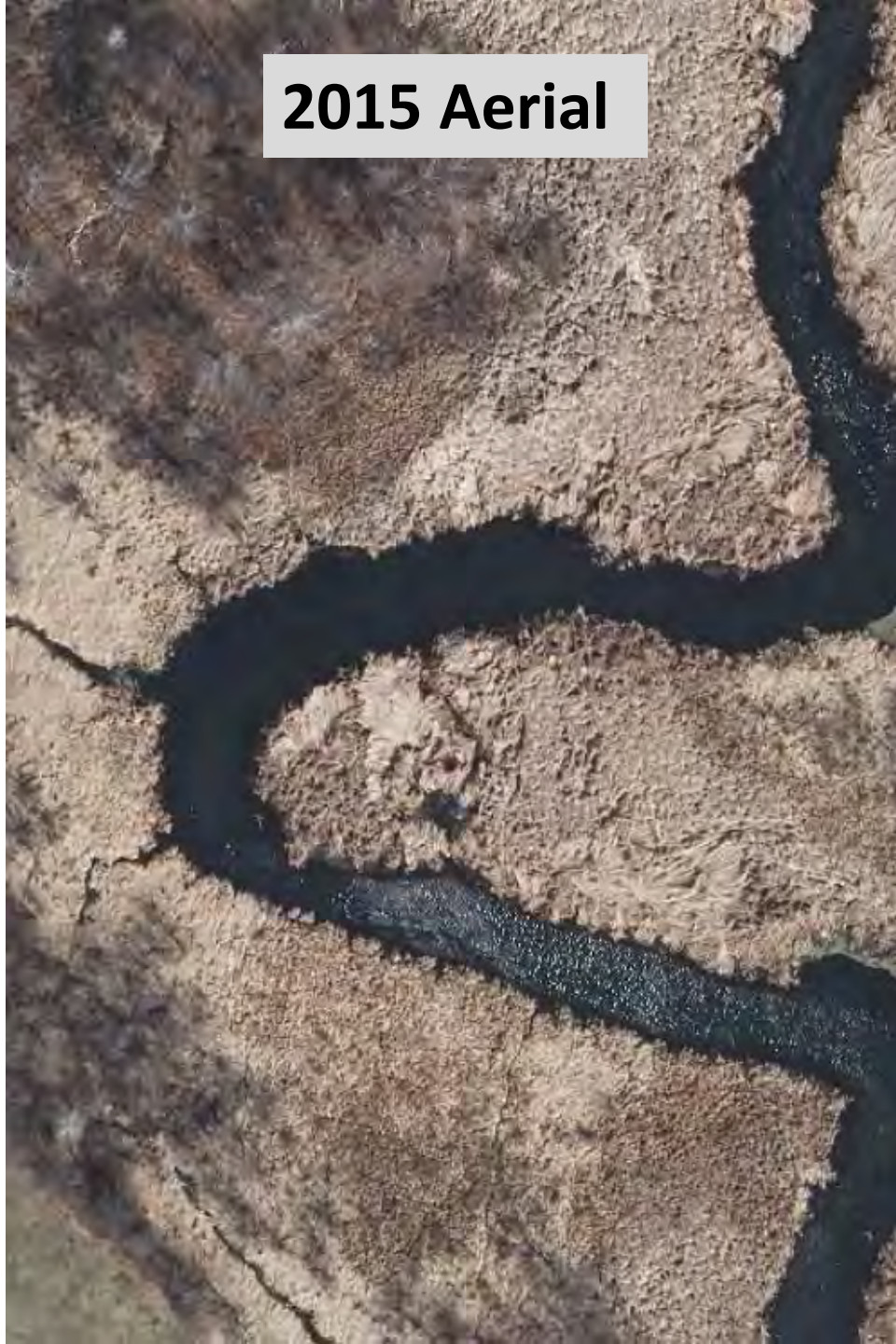


2020 Aerial



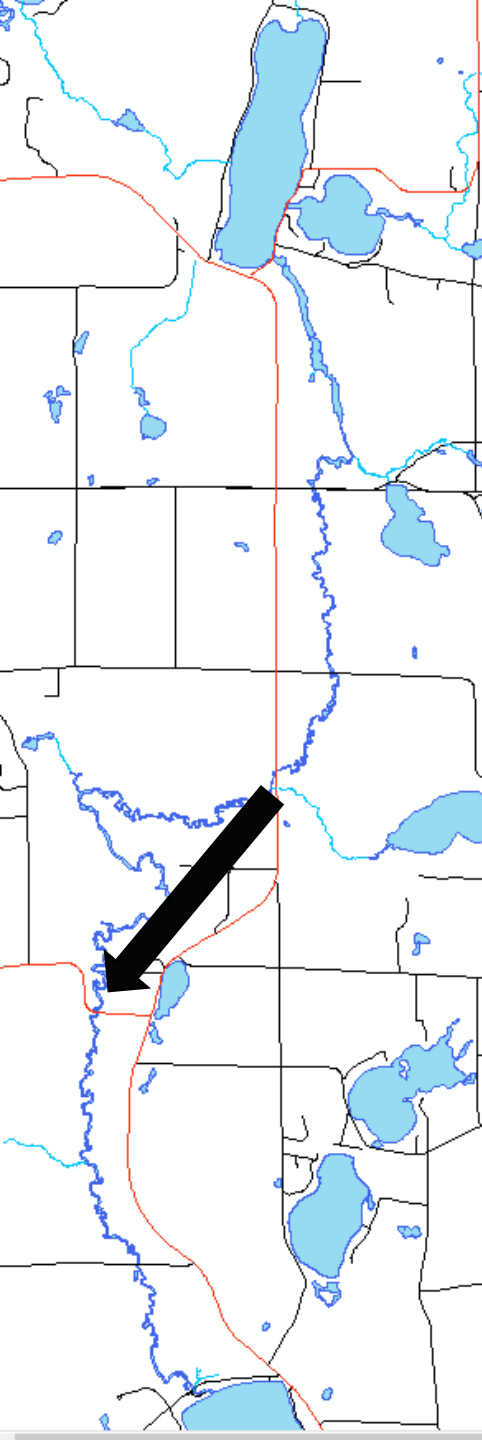


2015 Aerial



2020 Aerial



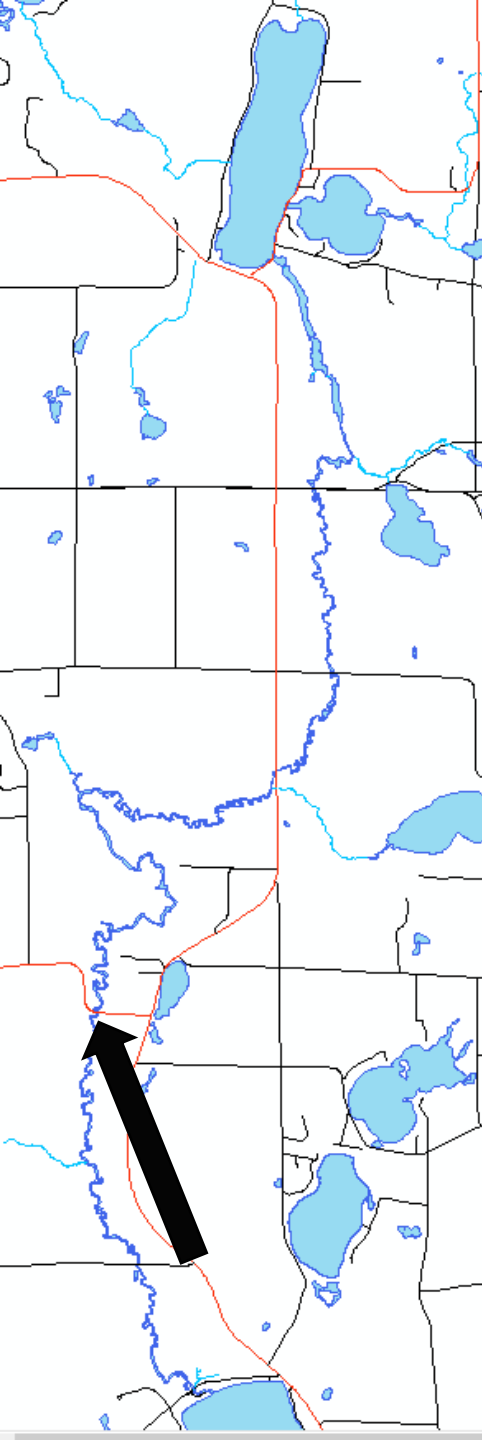


2015 Aerial



2020 Aerial



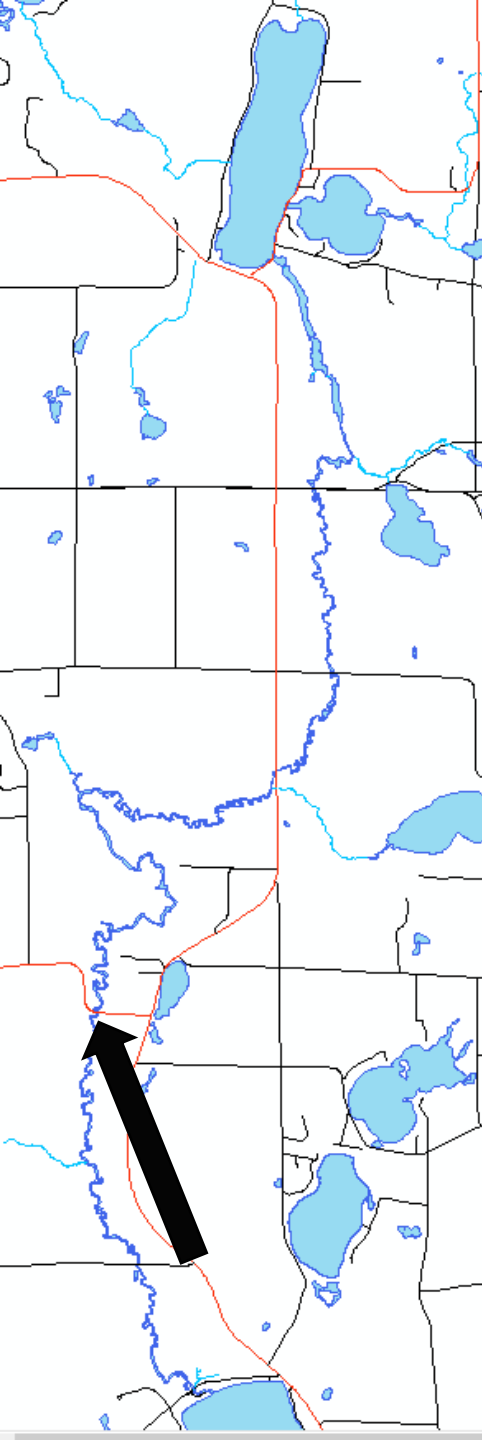


2015 Aerial



2020 Aerial





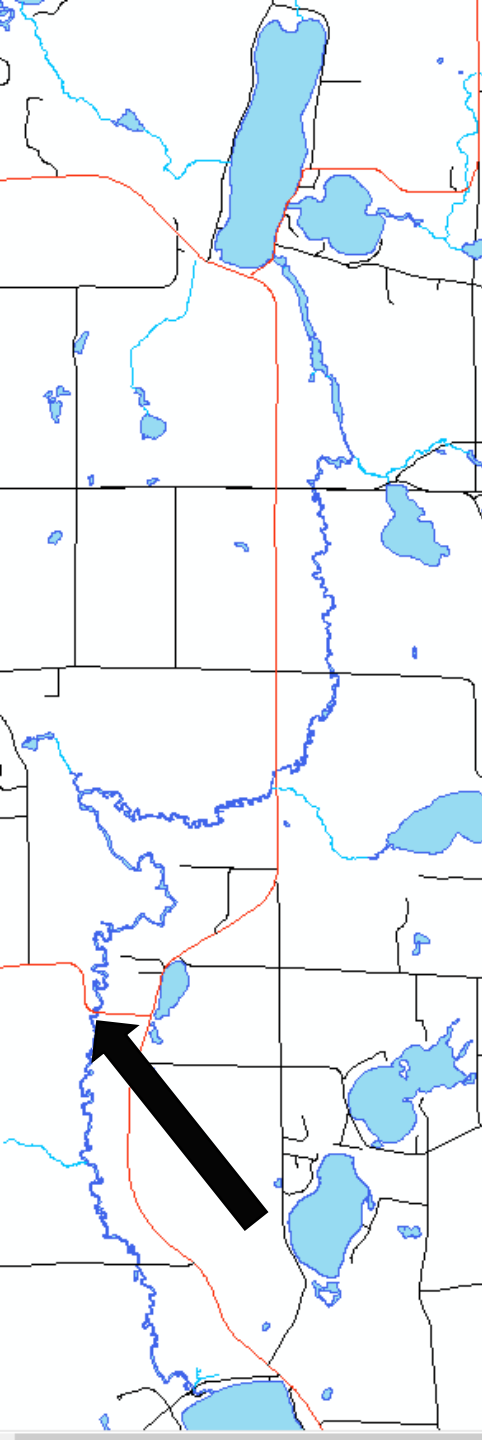
2015



Culvert Replacement at County Road X

2020



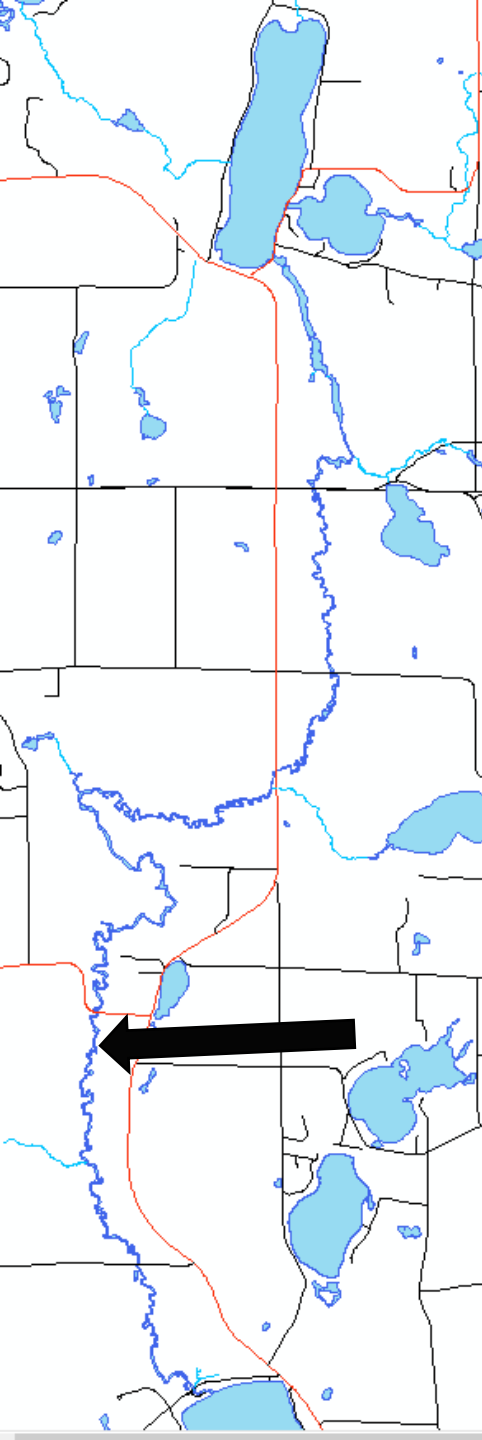


2015 Aerial



2020 Aerial



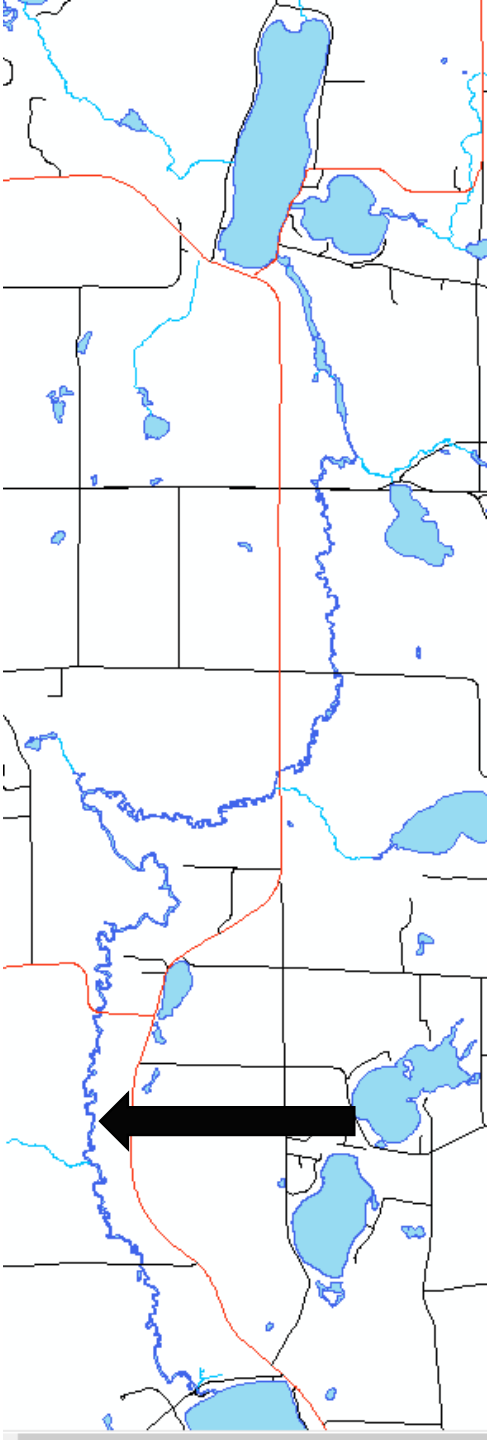


2015 Aerial



2020 Aerial



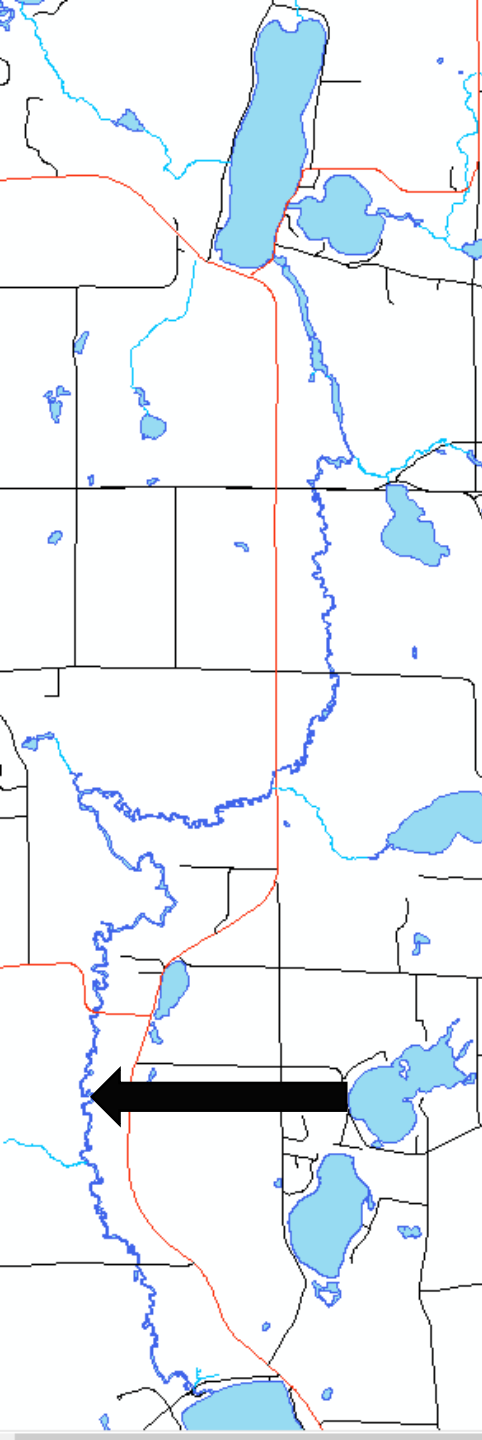


2015 Aerial



2020 Aerial



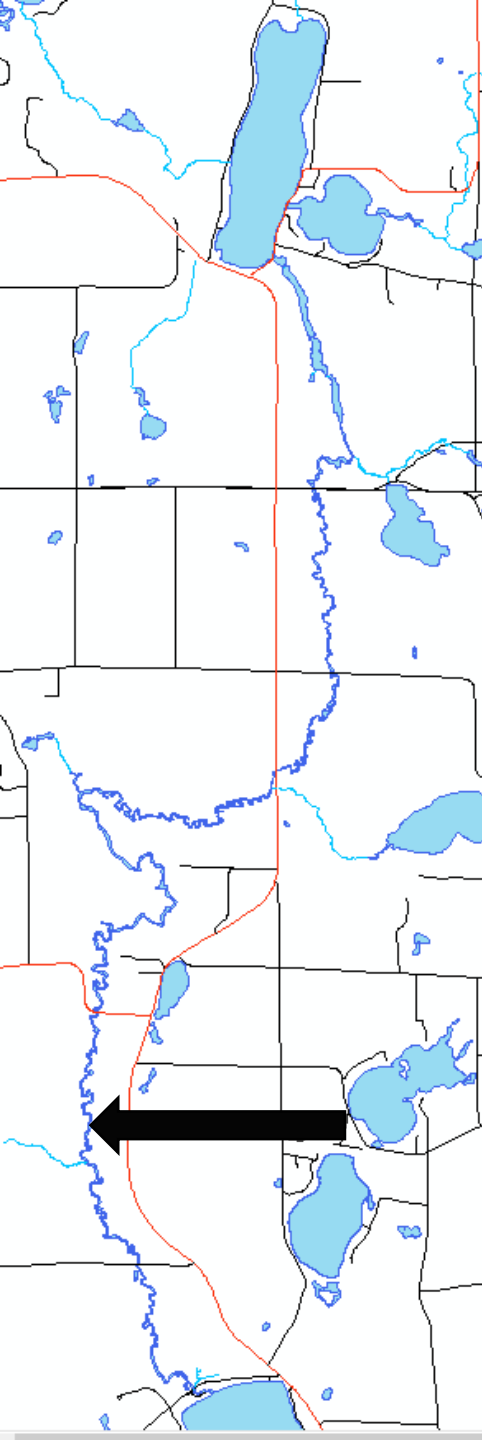


2015 Aerial



2020 Aerial



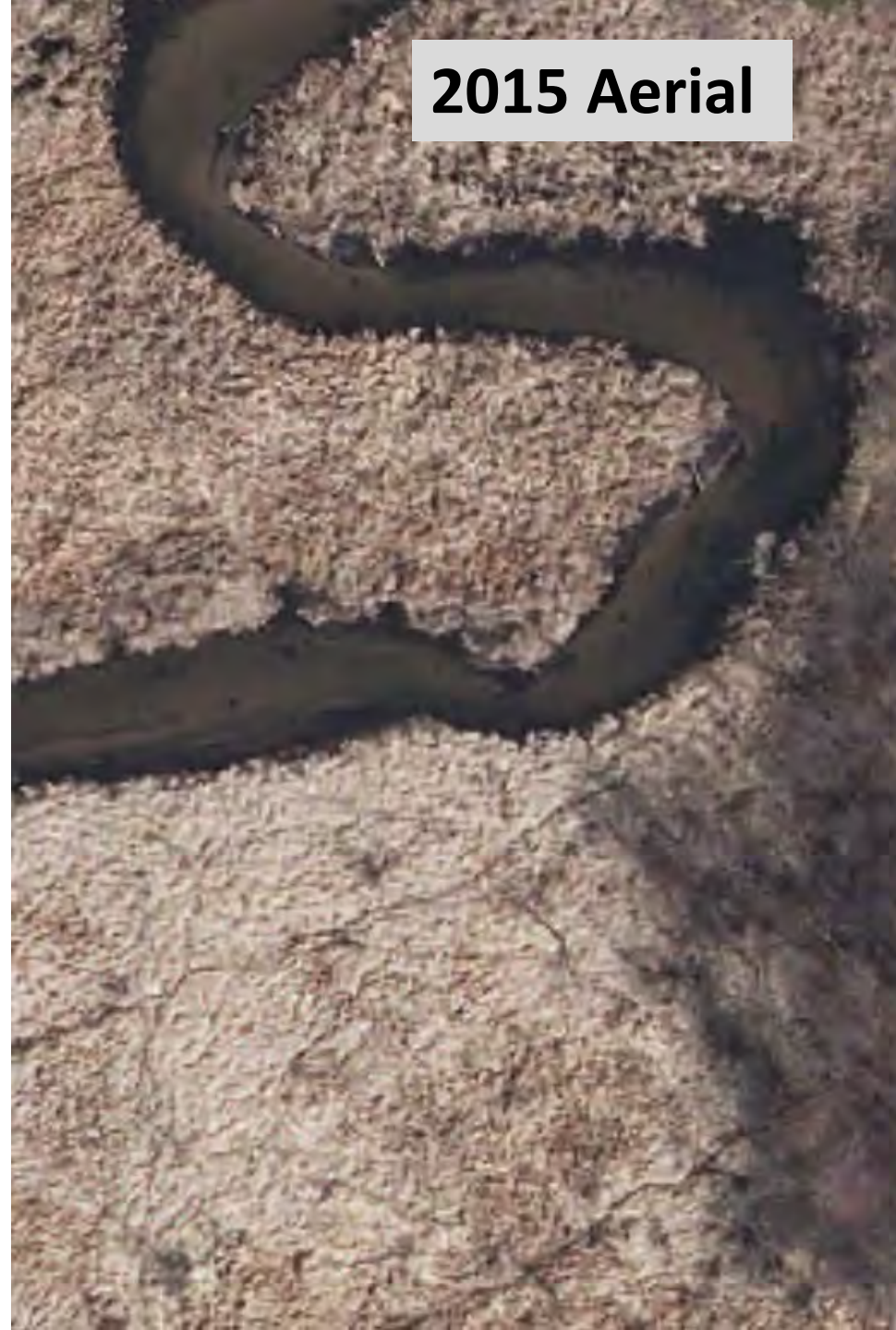
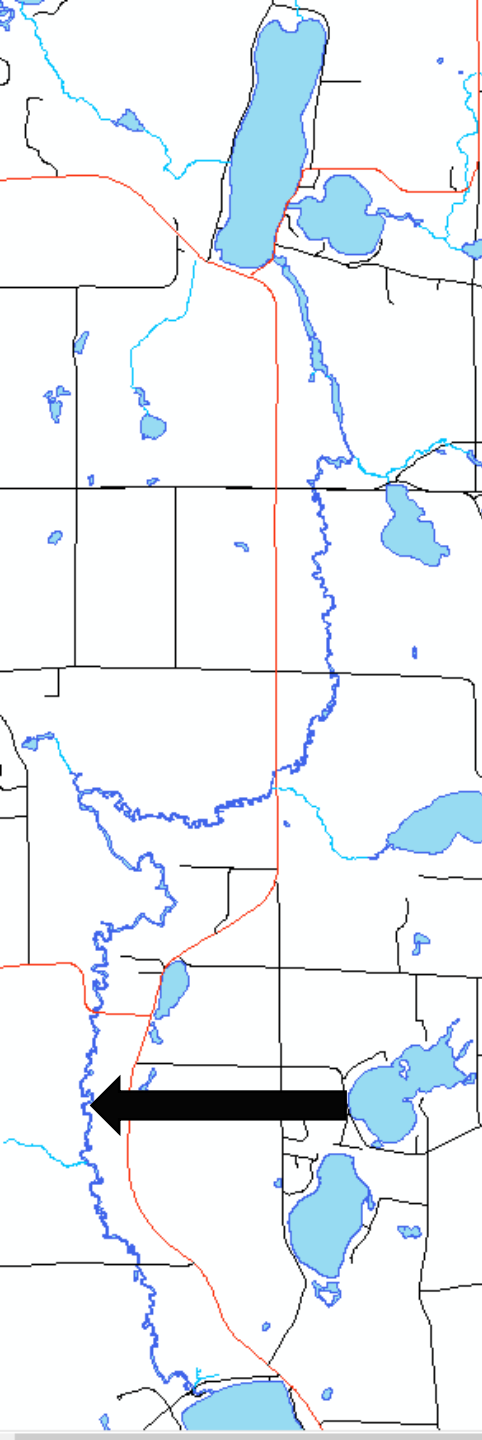


2015 Aerial



2010 Aerial

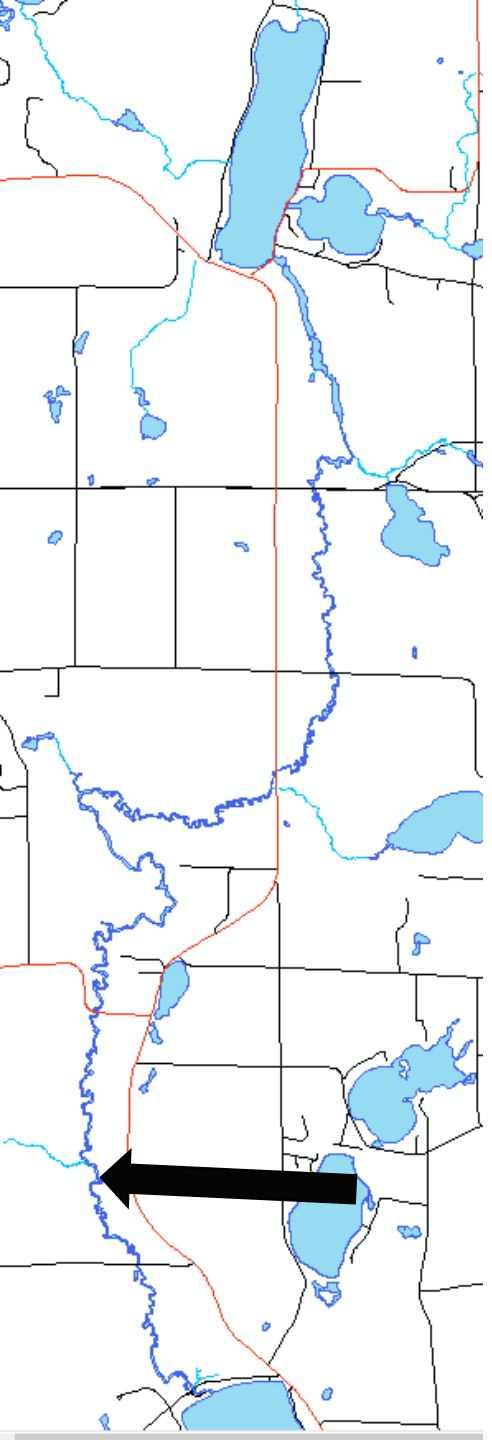


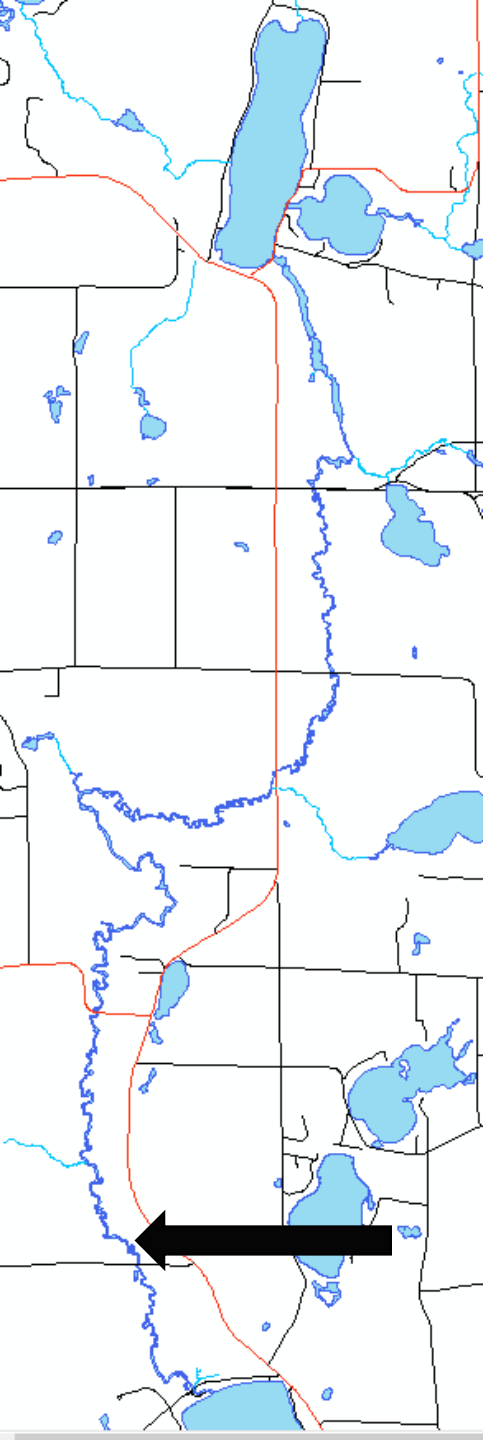


2015 Aerial

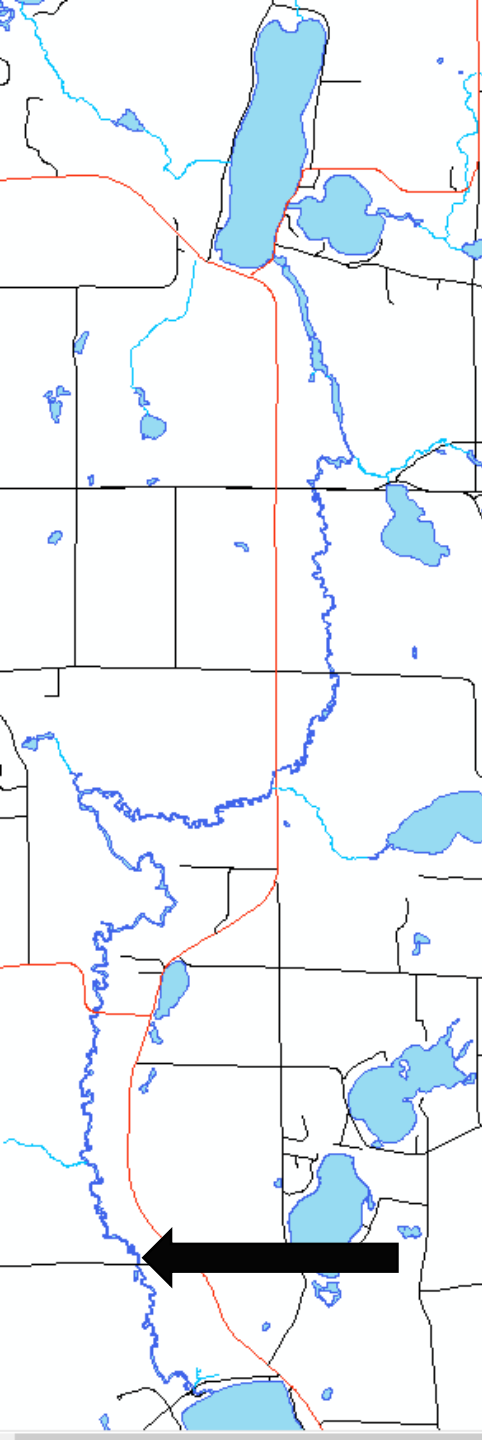


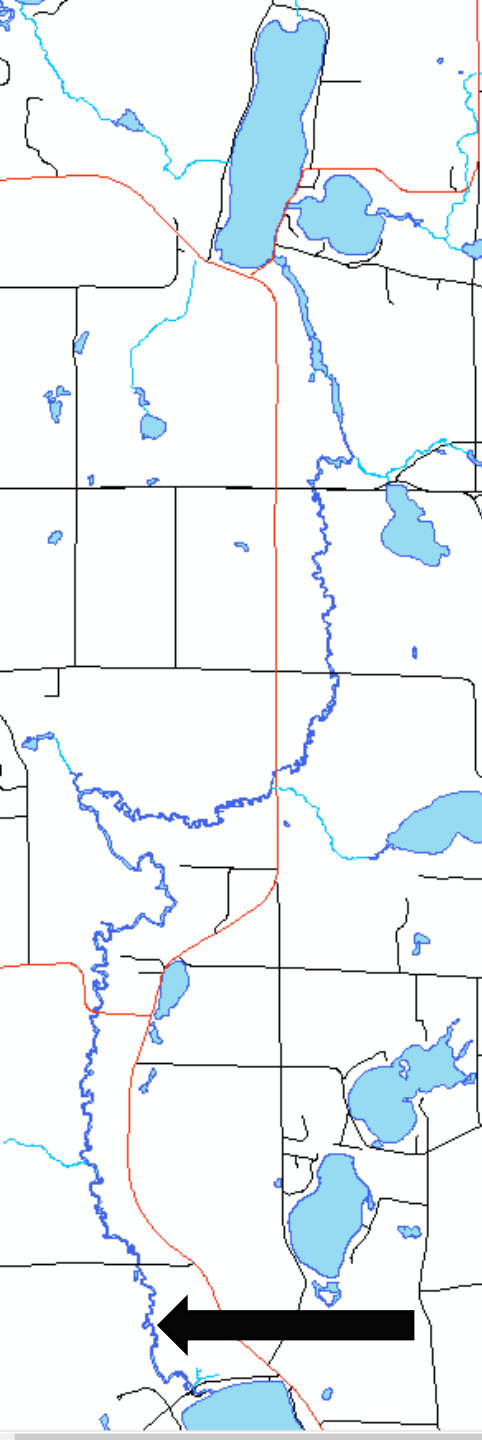
2020 Aerial

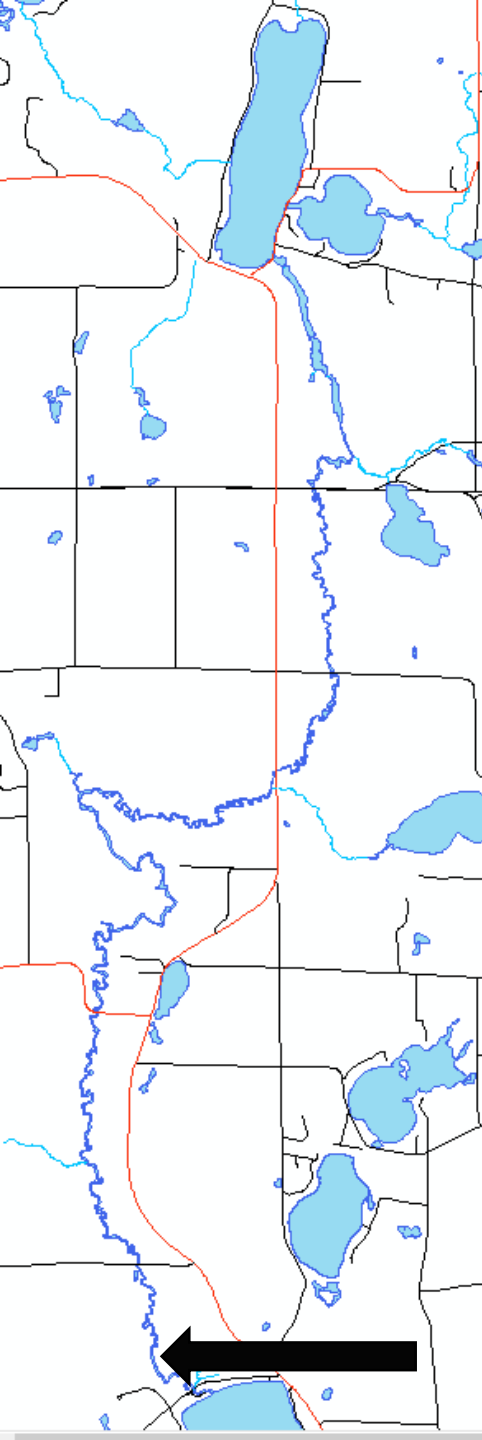




2020 Aerial With 2015 water line (Orange)





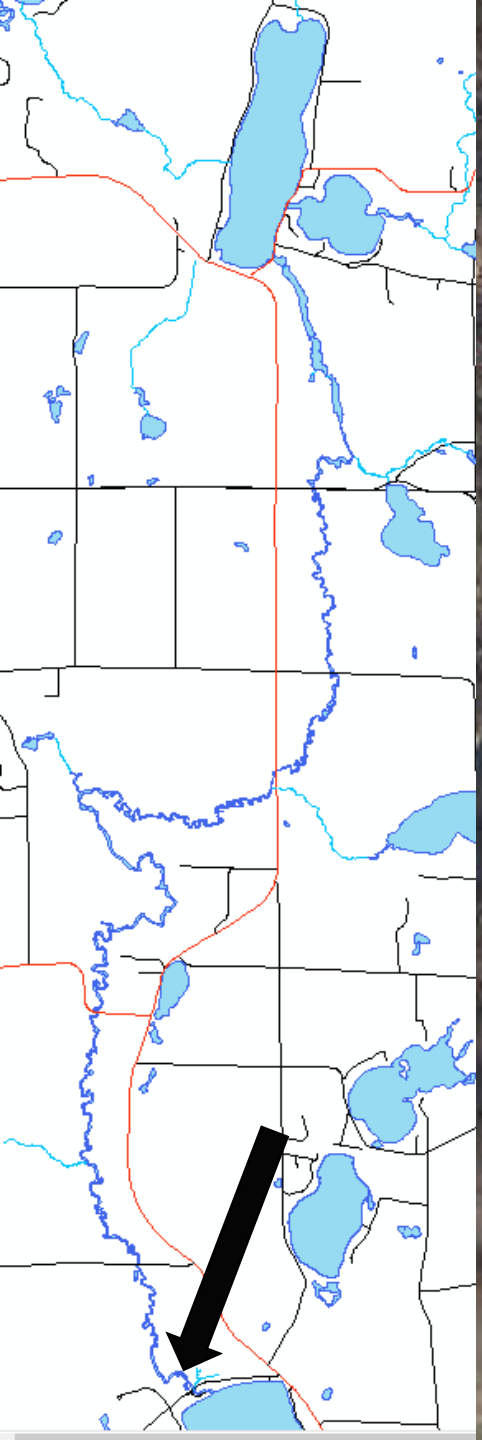


2015 Aerial



2020 Aerial



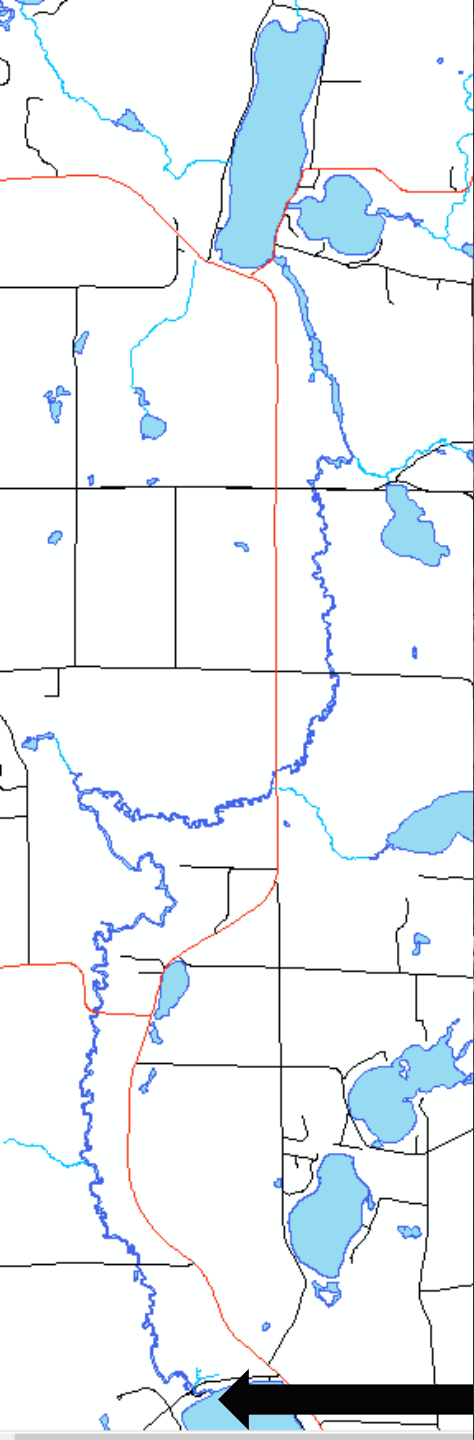


2015 Aerial

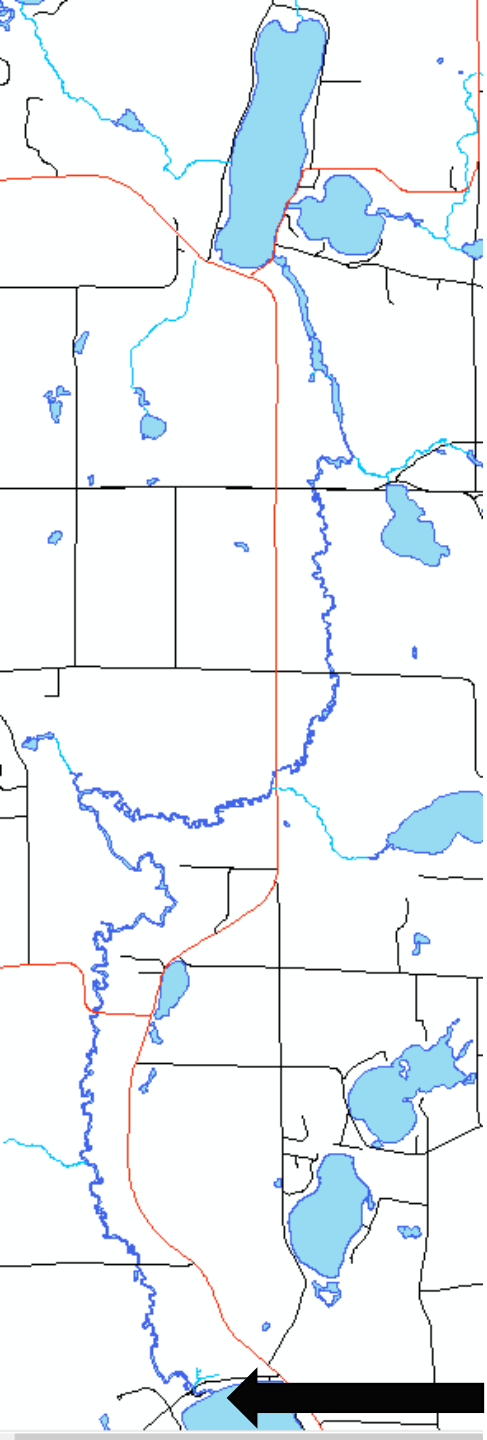


2020 Aerial

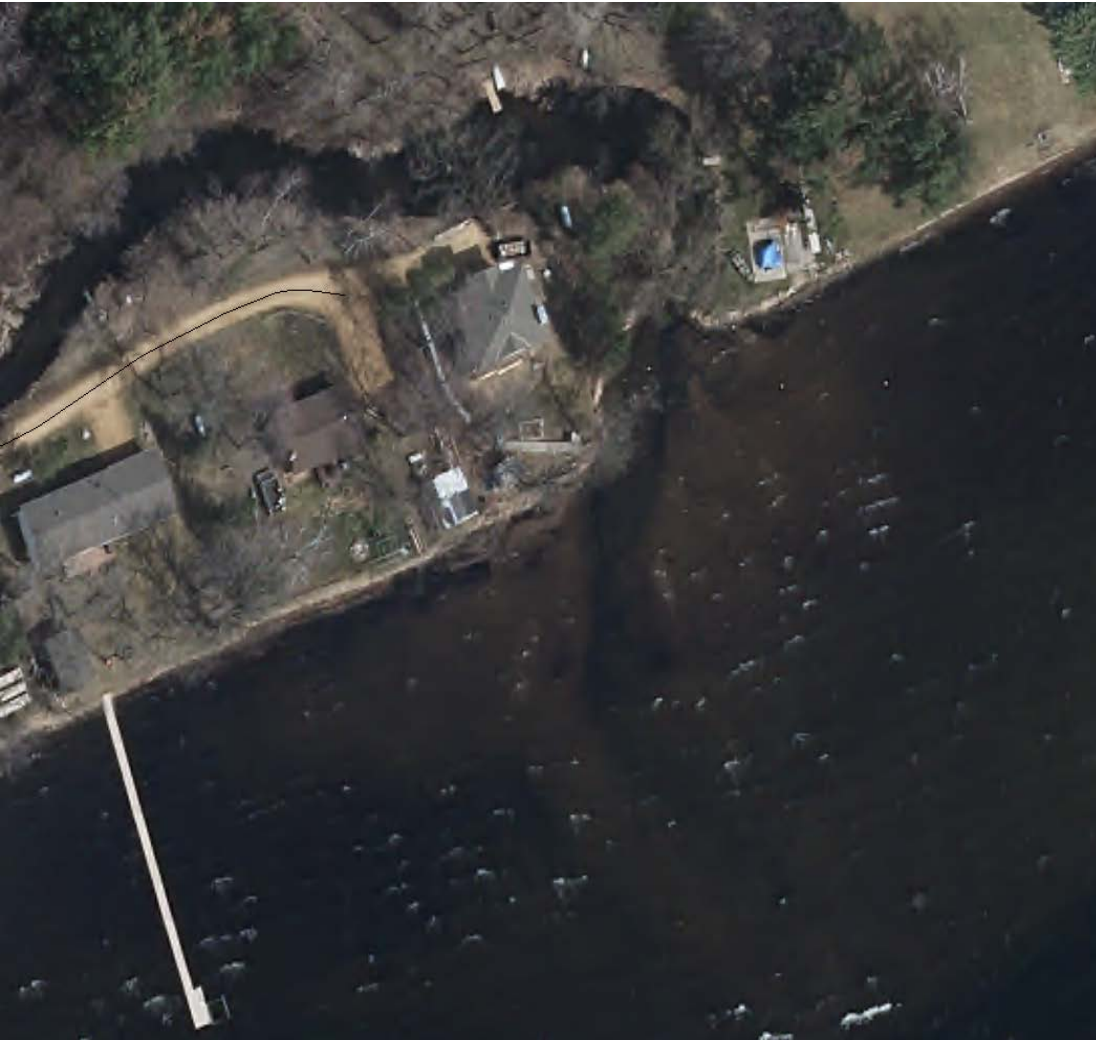




2015 Aerial



2015 Aerial



2020 Aerial

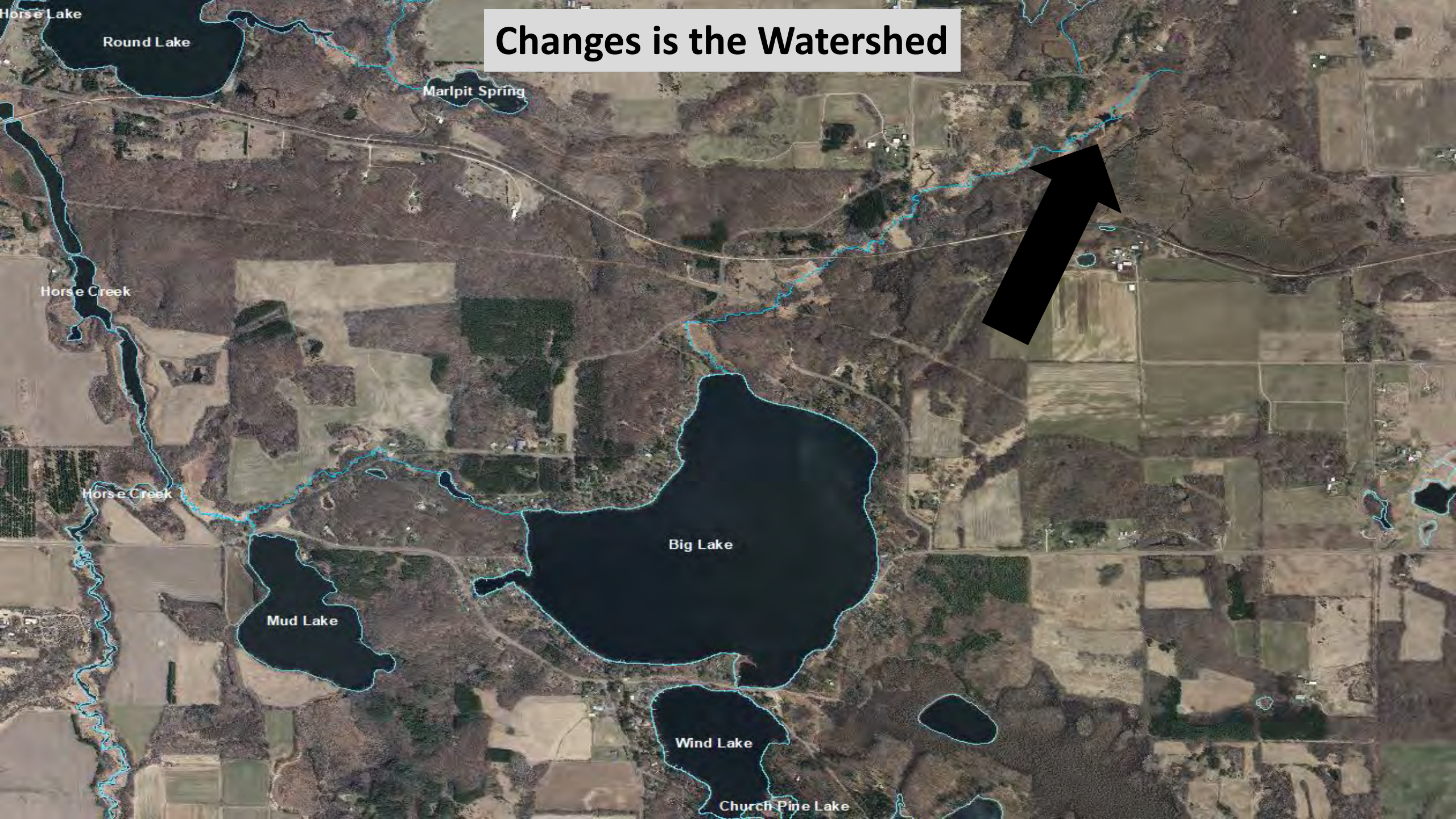


2015 Aerial With 2020 Shoreline (Yellow)



2020 Aerial With 2015 Shoreline (Orange)

Changes is the Watershed



Tributary to Big Lake 2006



Tributary to Big Lake 2010



Tributary to Big Lake 2015



Tributary to Big Lake 2020





2006



2015



2010



2020

2008



2010



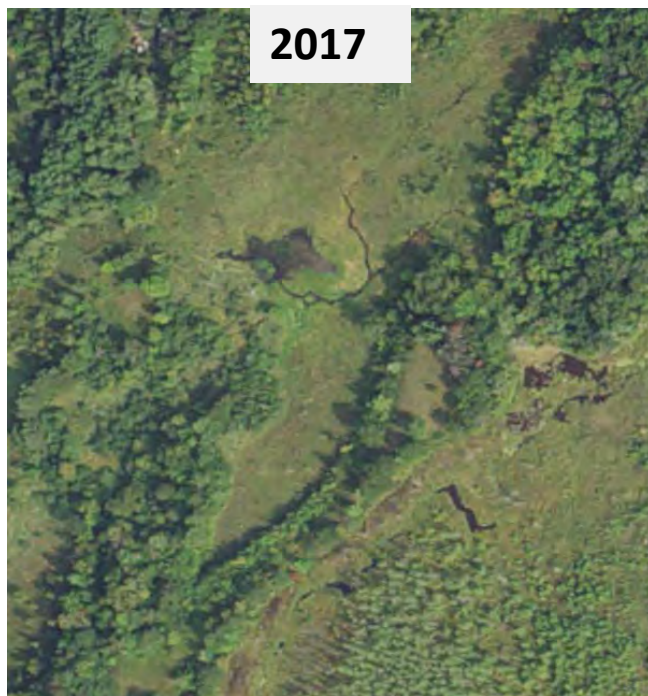
2013



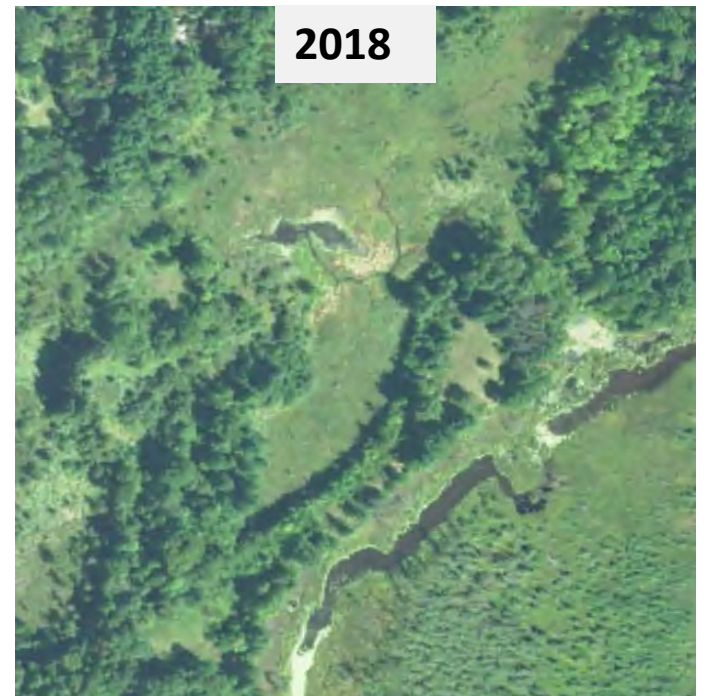
2015



2017



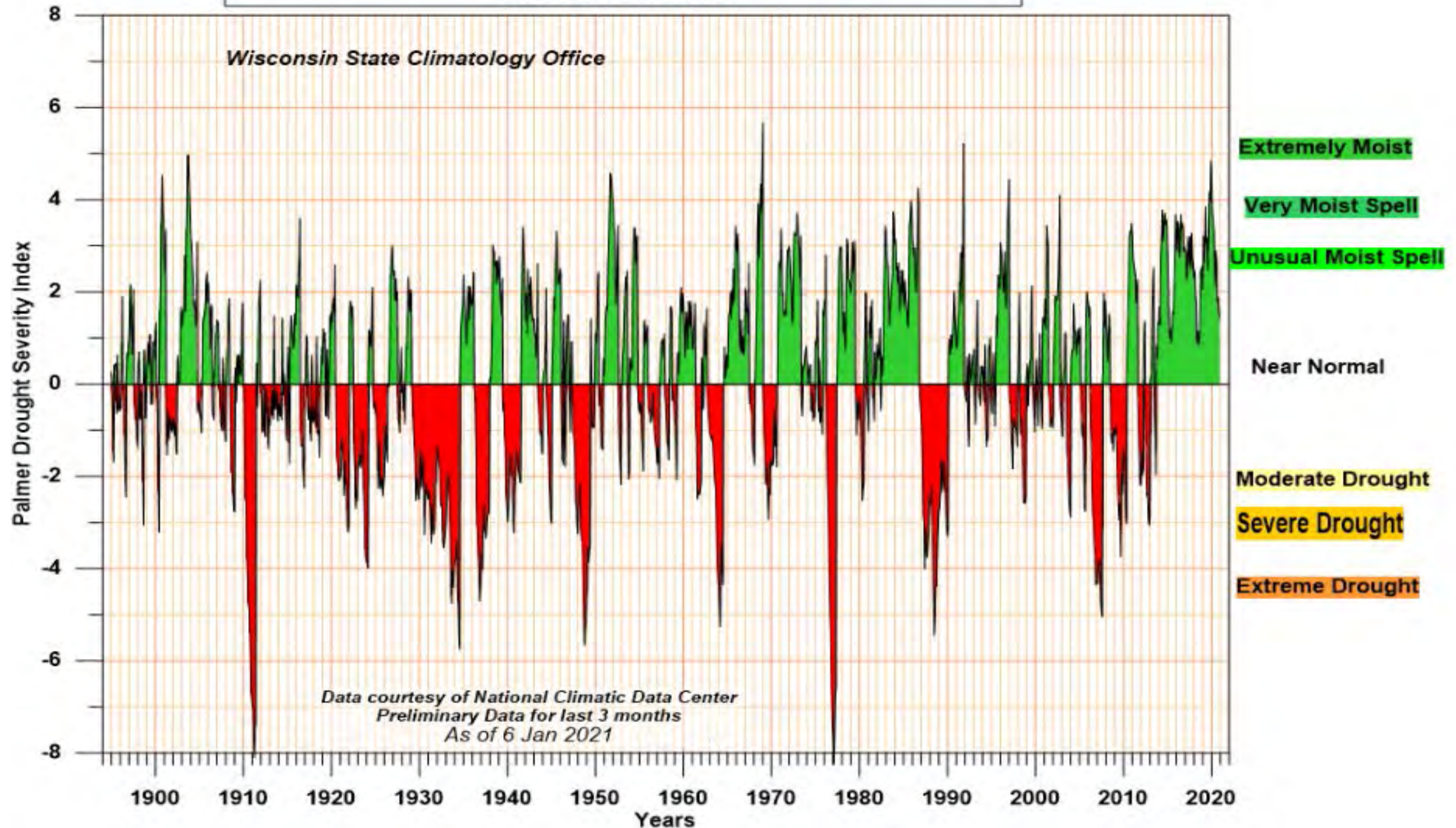
2018





<\\pcgov\\users\\coltonsorensen\\Photos\\biglake.gif>

**Northwest Wisconsin (Div 4701) Palmer Drought Severity Index
Jan 1895-Dec 2020**



An aerial photograph of a rural landscape. A winding river flows through the center of the image, surrounded by green fields and a dense forest. The river has several loops and bends, creating a meandering path. The surrounding land is a mix of green grass and brownish soil, suggesting a natural or semi-natural environment. In the background, there are more fields and a line of trees under a clear blue sky.

Questions?