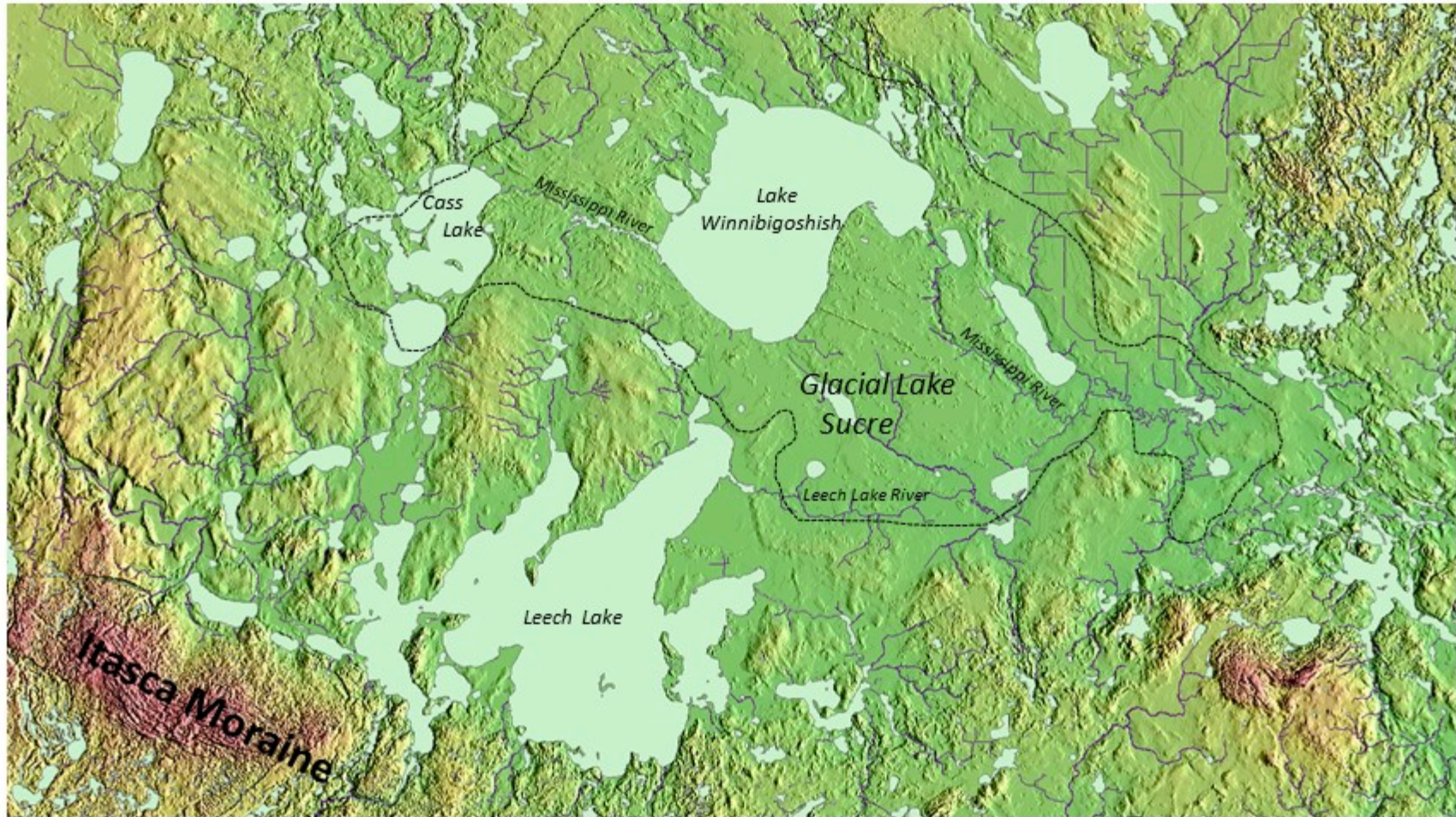


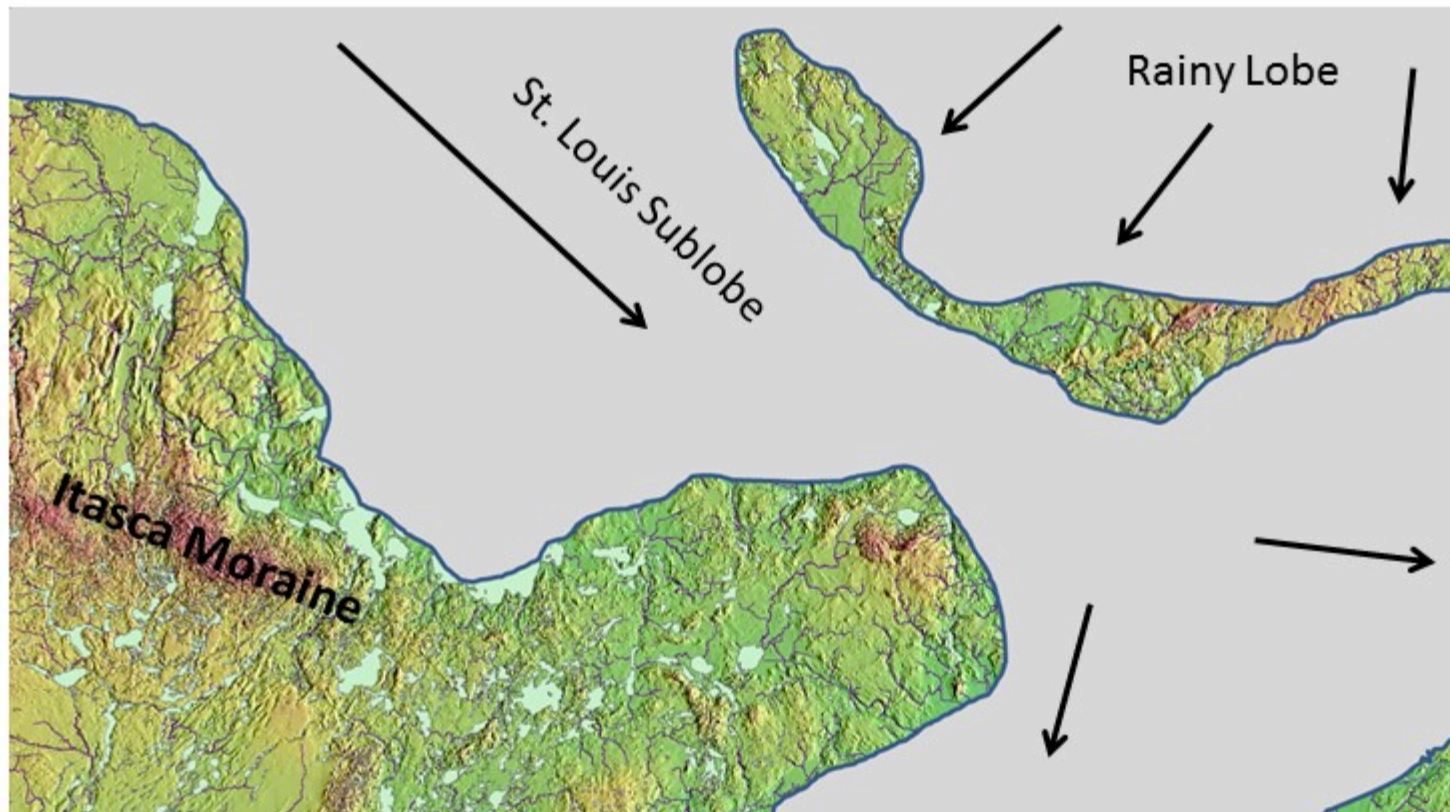
# Native Science Educators Workshop

## Field Trip: Cass Lake, Mn, Area

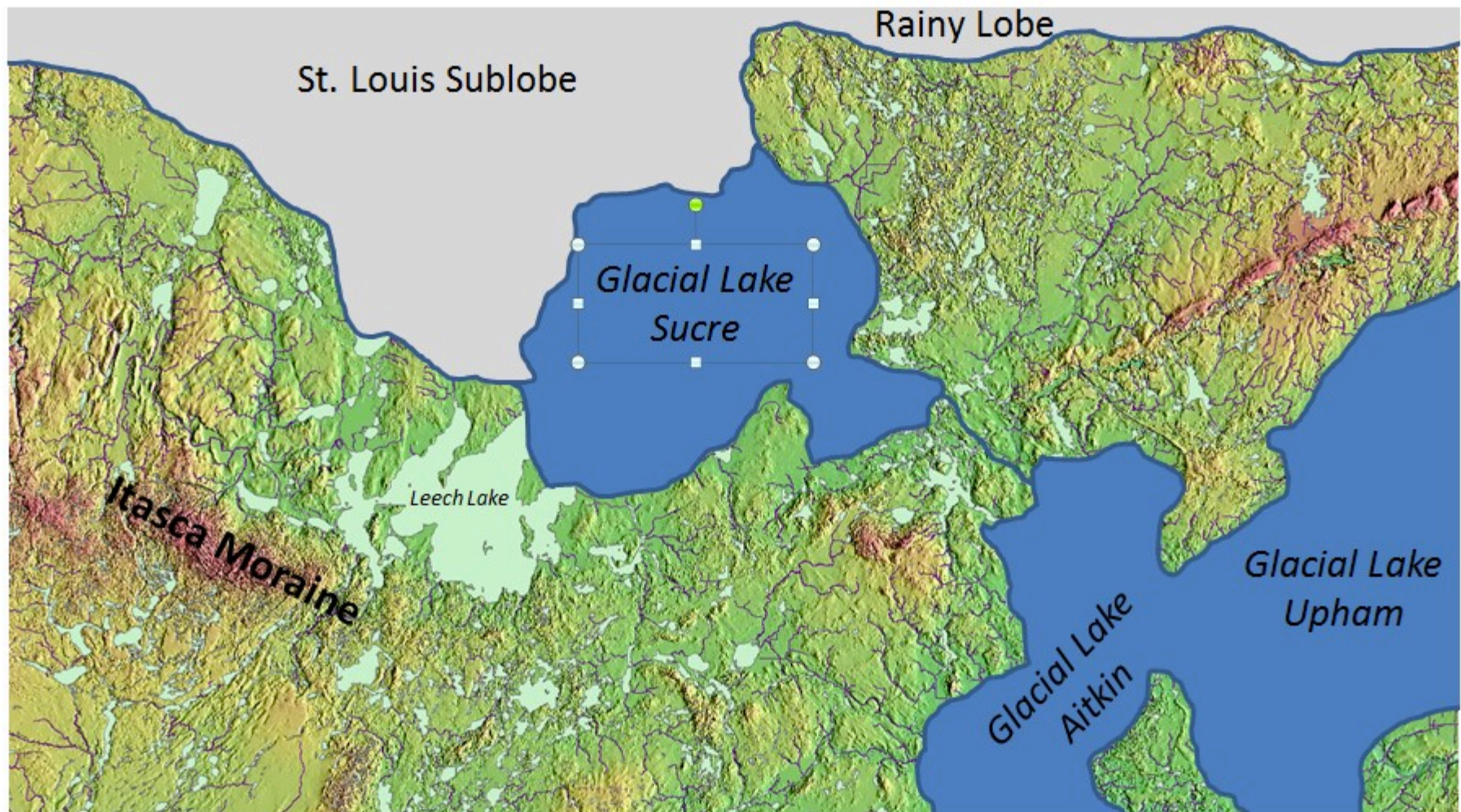


Shaded relief image of the Cass Lake region with the sandy bottom of Glacial Lake Sucre outlined.





Following the retreat of the Rainy lobe from the Cass Lake region, the St. Louis sublobe advanced across the area and into the basins of glacial lakes Aitkin and Upham.

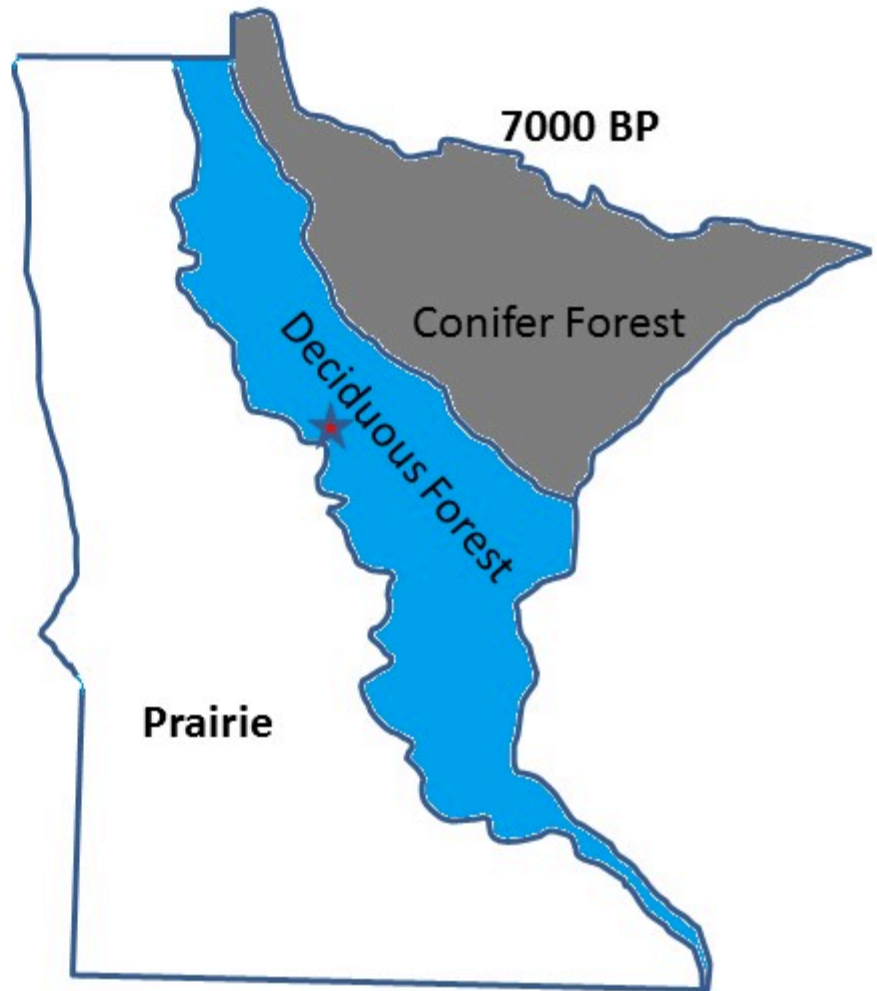
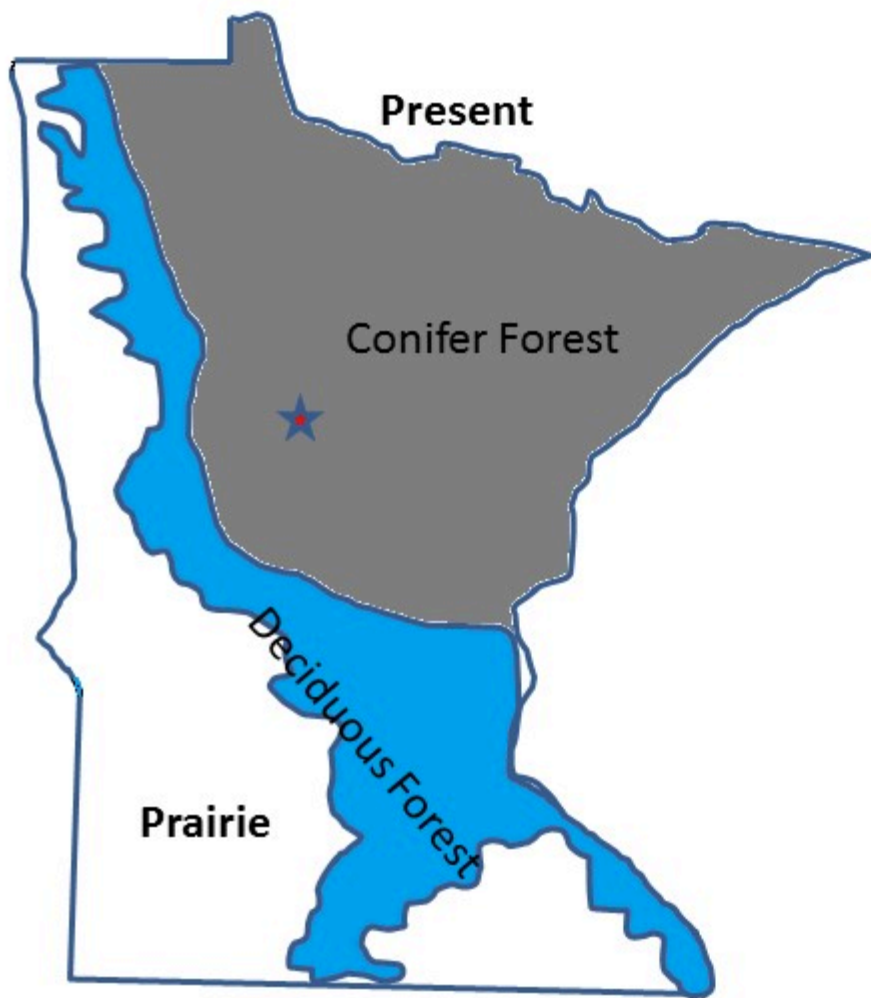


The St. Louis sublobe quickly melted exposing glacial lakes Aitkin, Upham, and Sucre. Lake Sucre was likely very shallow and characterized by rapid through flow of sediment-laden glacial meltwater.

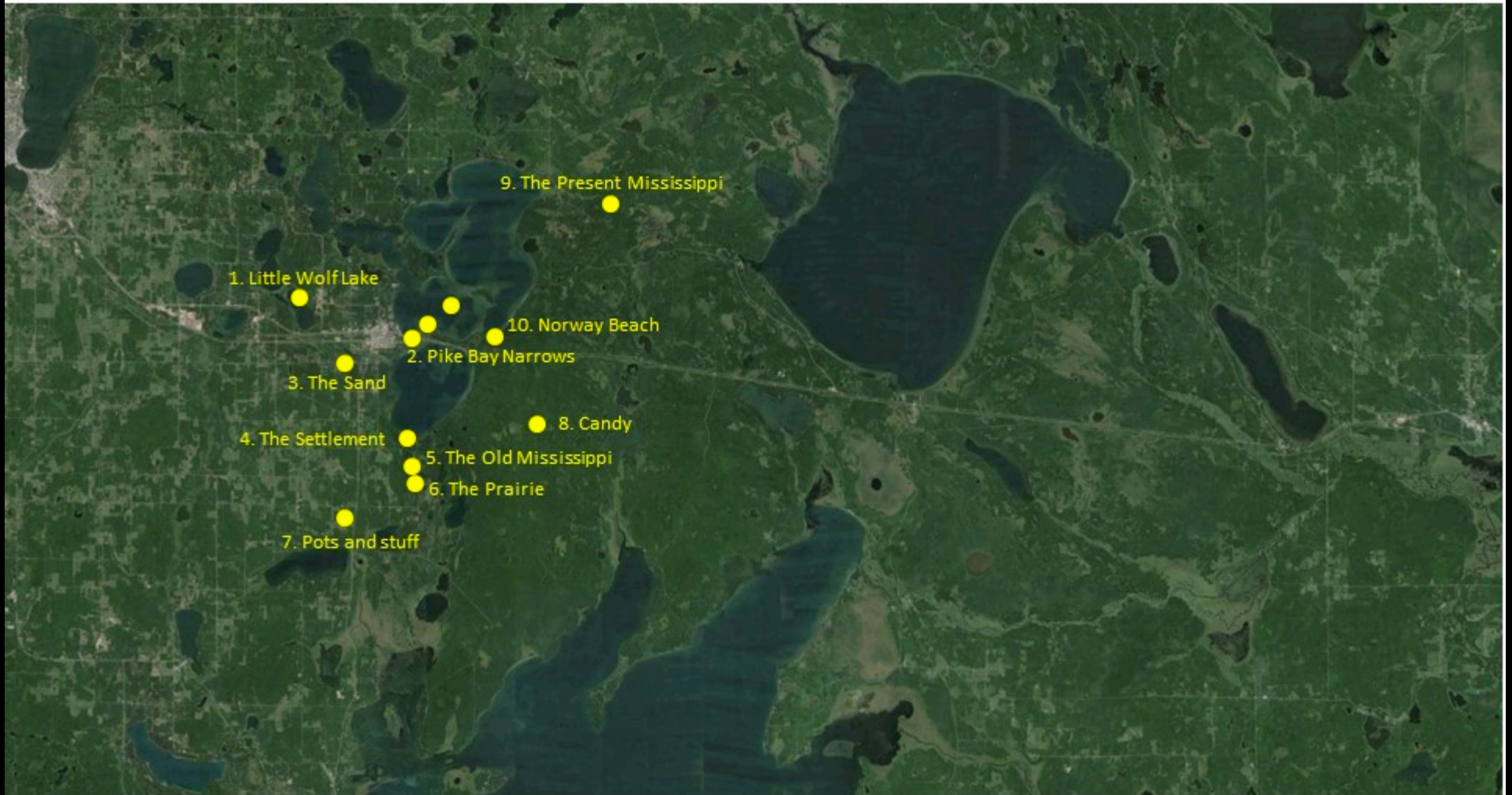






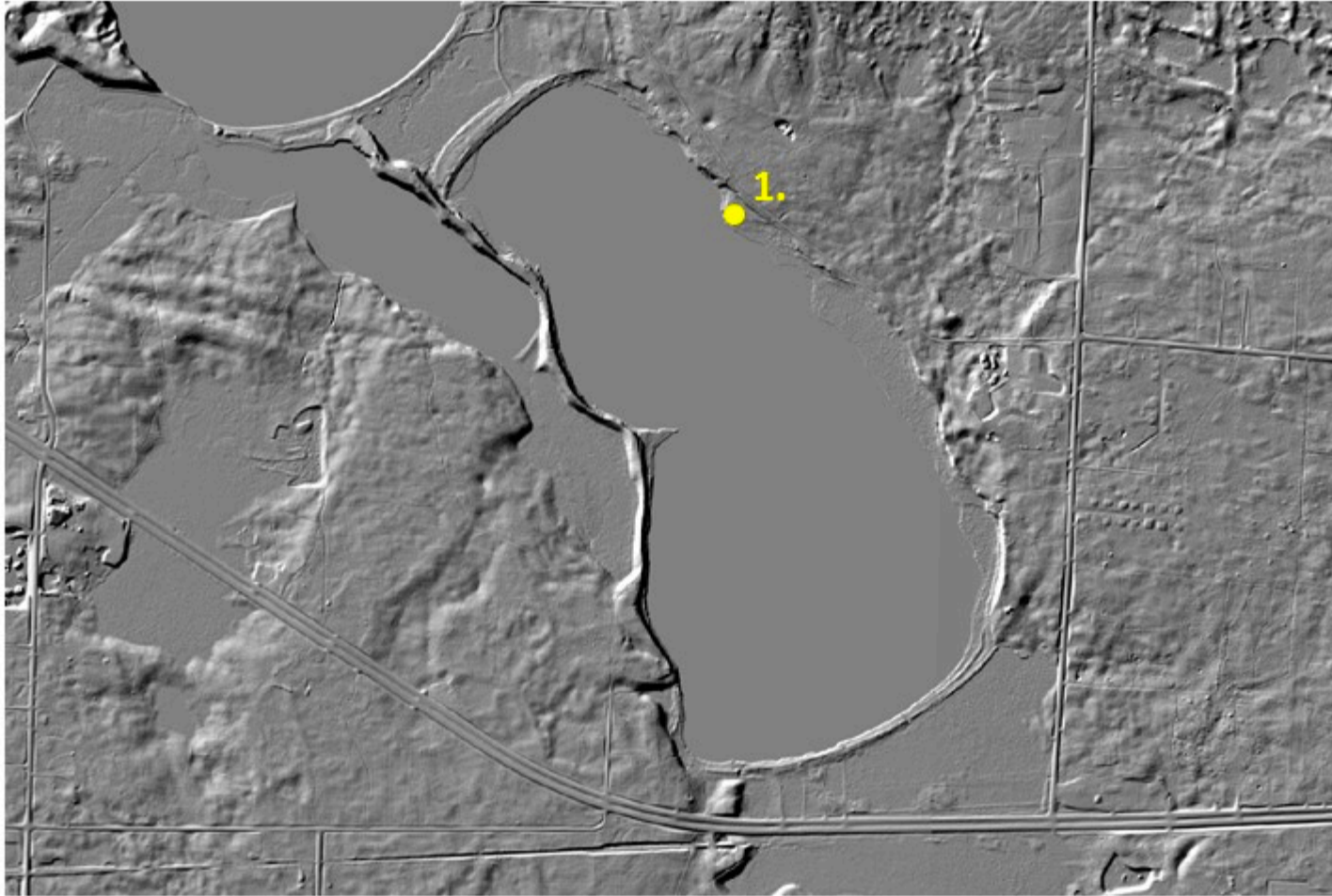


Present distribution of major biomes in Minnesota and the Middle Holocene (7000 BP) distribution highlighting the eastward shift of the prairie.

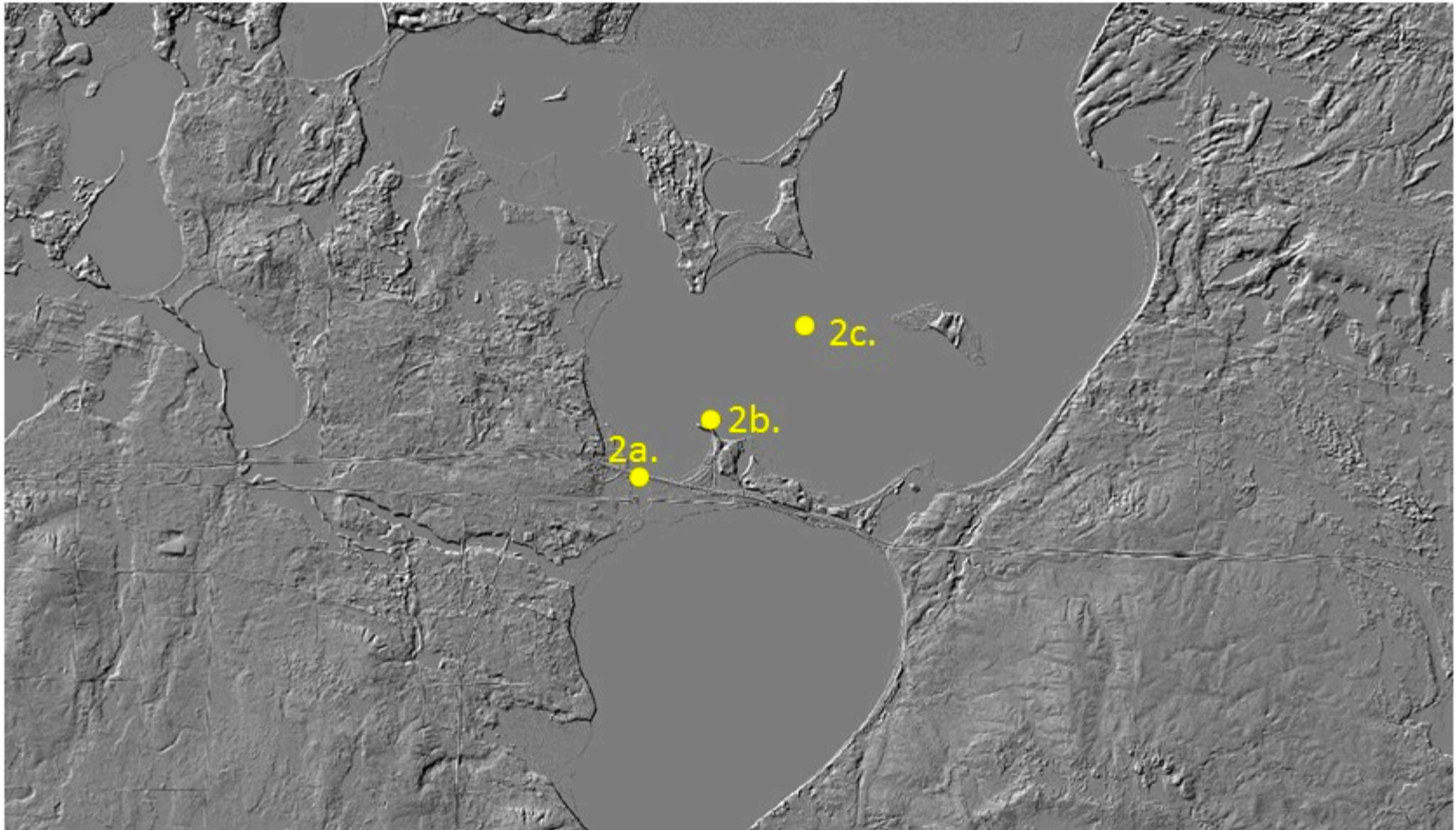


Location of field trip stops.





Stop 1. Little wolf lake.

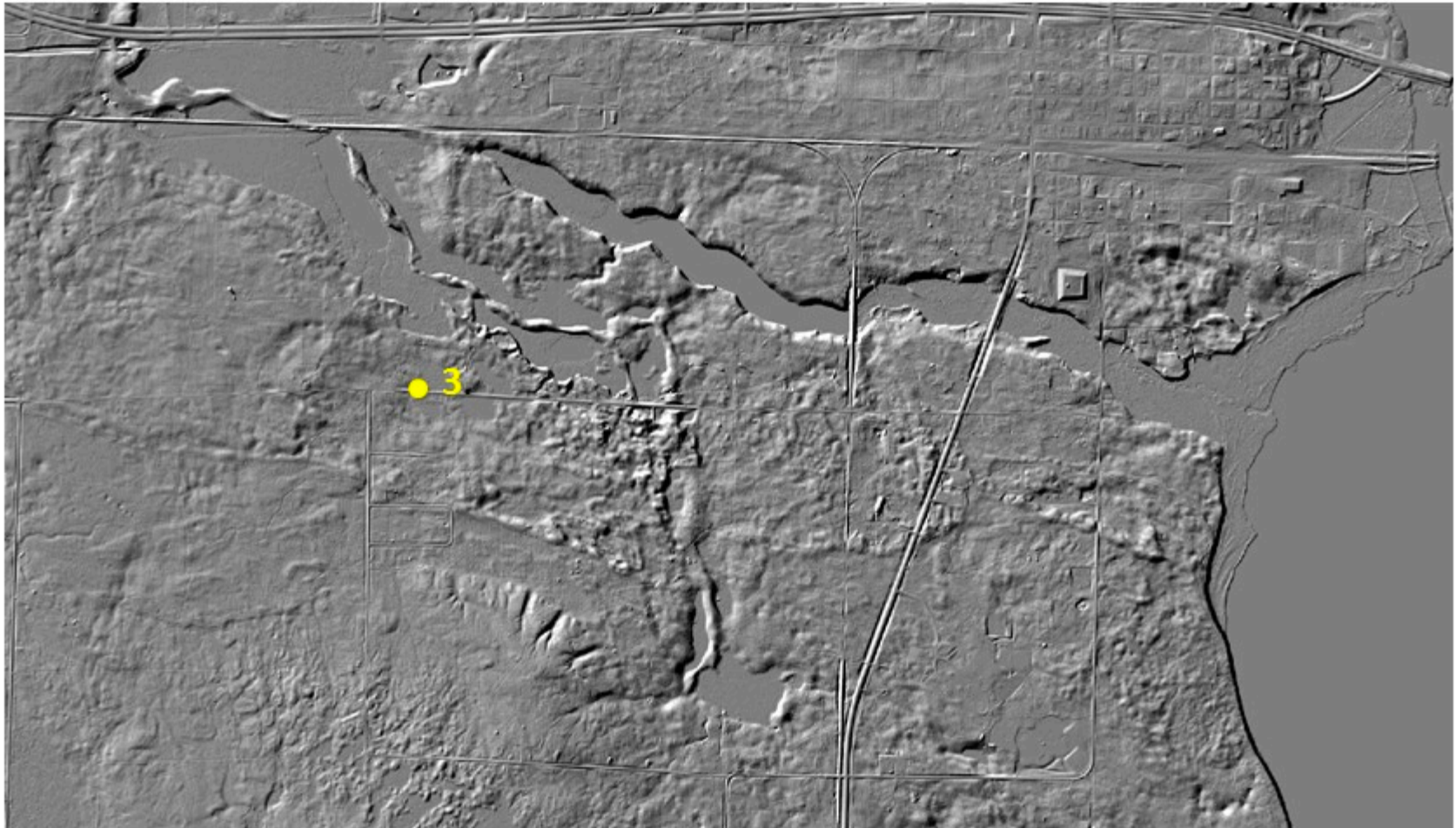


Stop 2. Pike Bay Narrows, Stony Point, and the lake bathymetry.



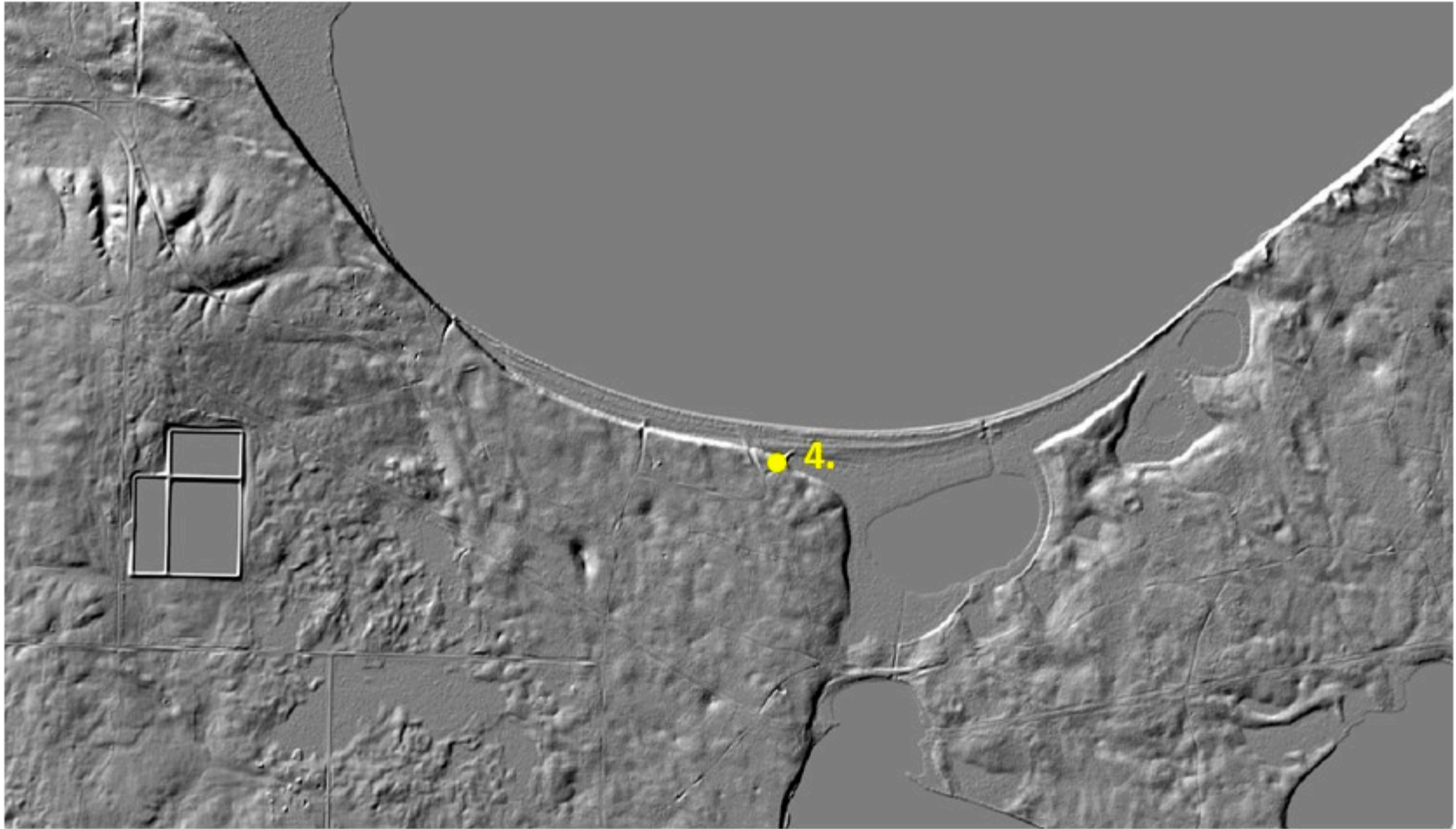


Stop 2c. Cass Lake bathymetry.



Stop 3. Bottom sediments of Glacial Lake Sucre. Here the fine to very fine sand has been reworked into low-relief sand dunes.



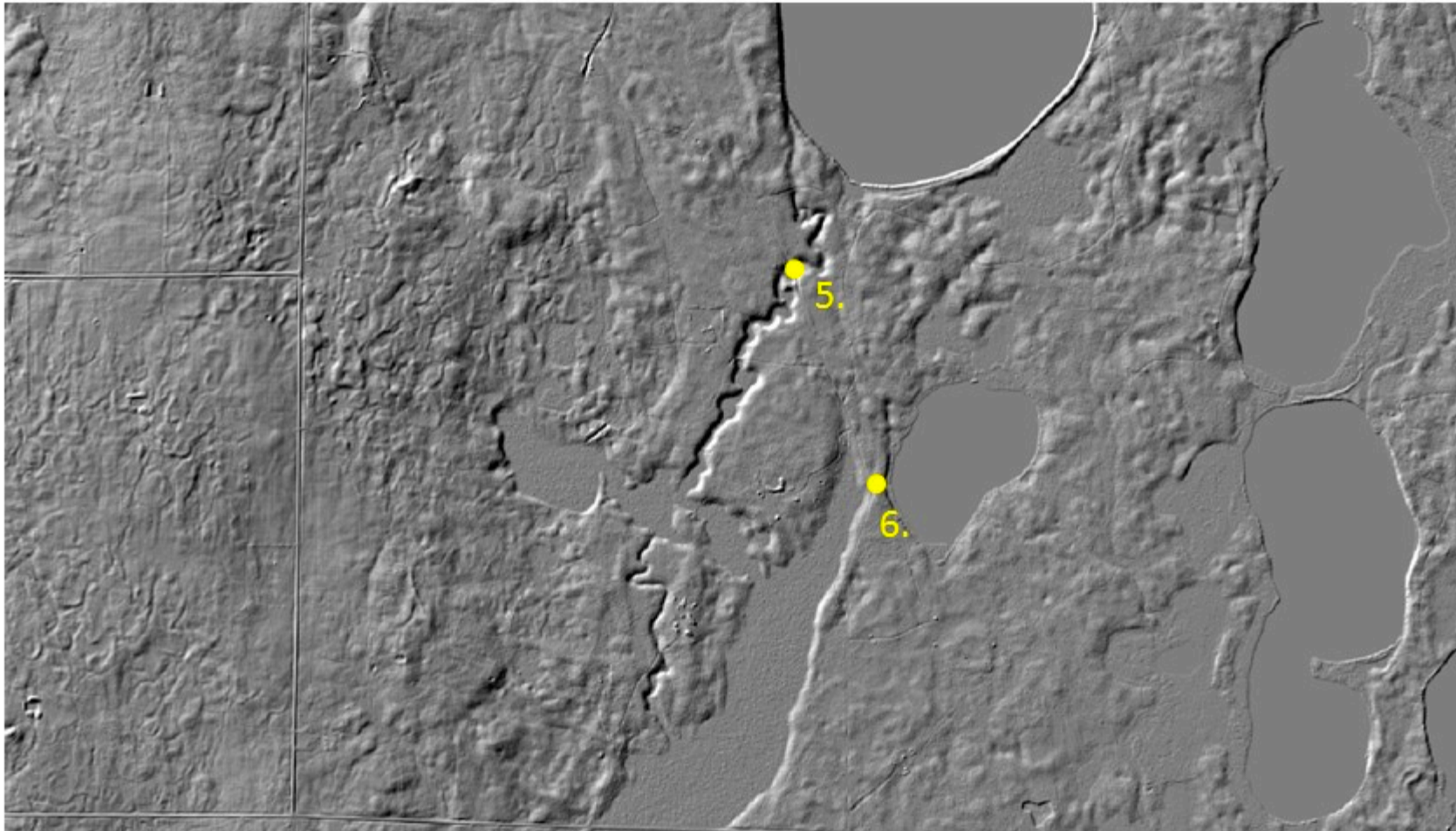


Stop 4. South Pike Bay archaeological site.



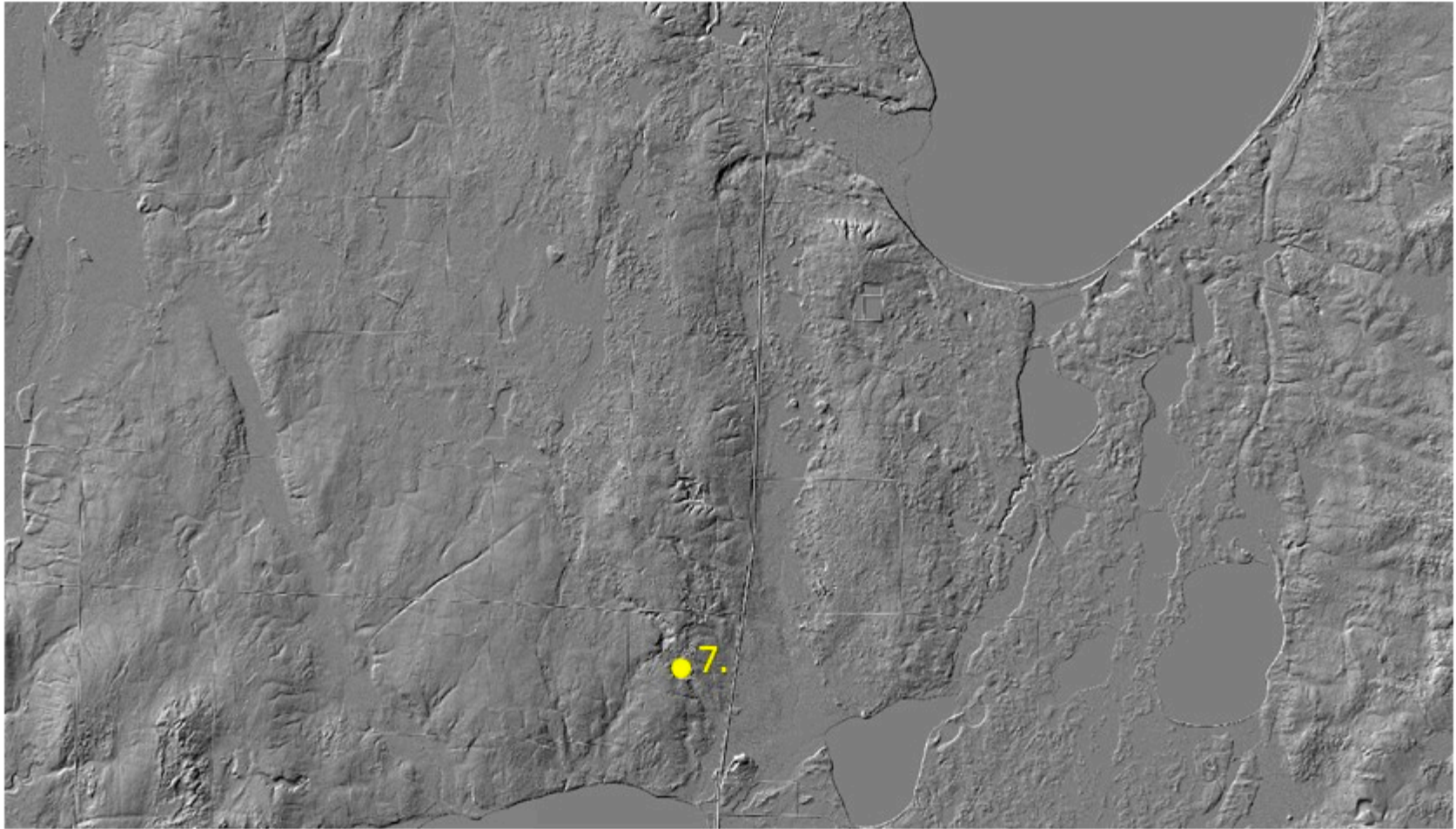
Stop 4. South Pike Bay archaeological site.





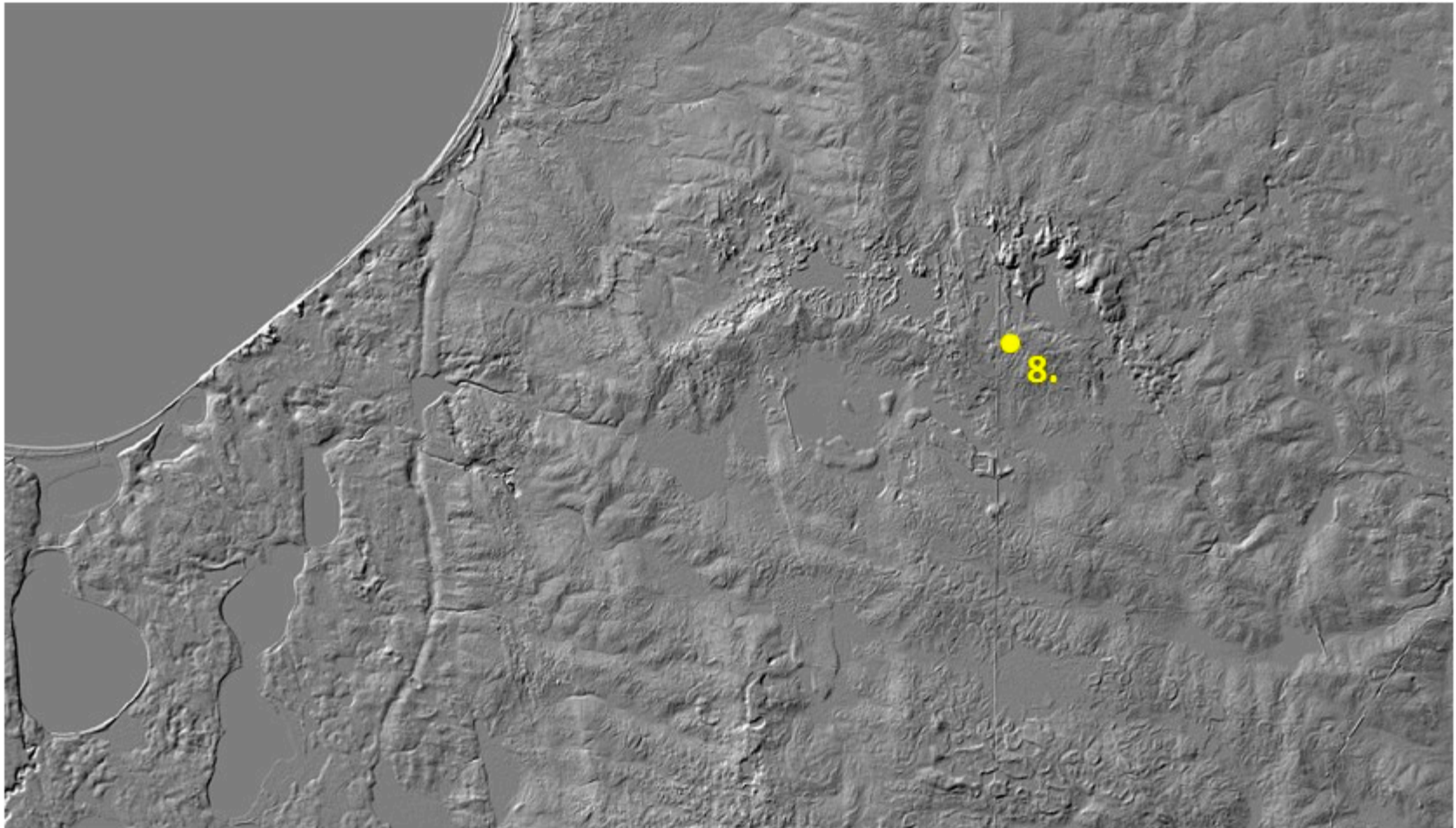
Stop 5. Abandoned meandering channel that once drained Cass Lake into Leech Lake. The well developed meanders indicate a mature drainage network.

Stop 6. Actually a drive through the natural vegetation. Between stops 3 and 7 there are pronounced differences in the nature of the vegetation. These will be highlighted.

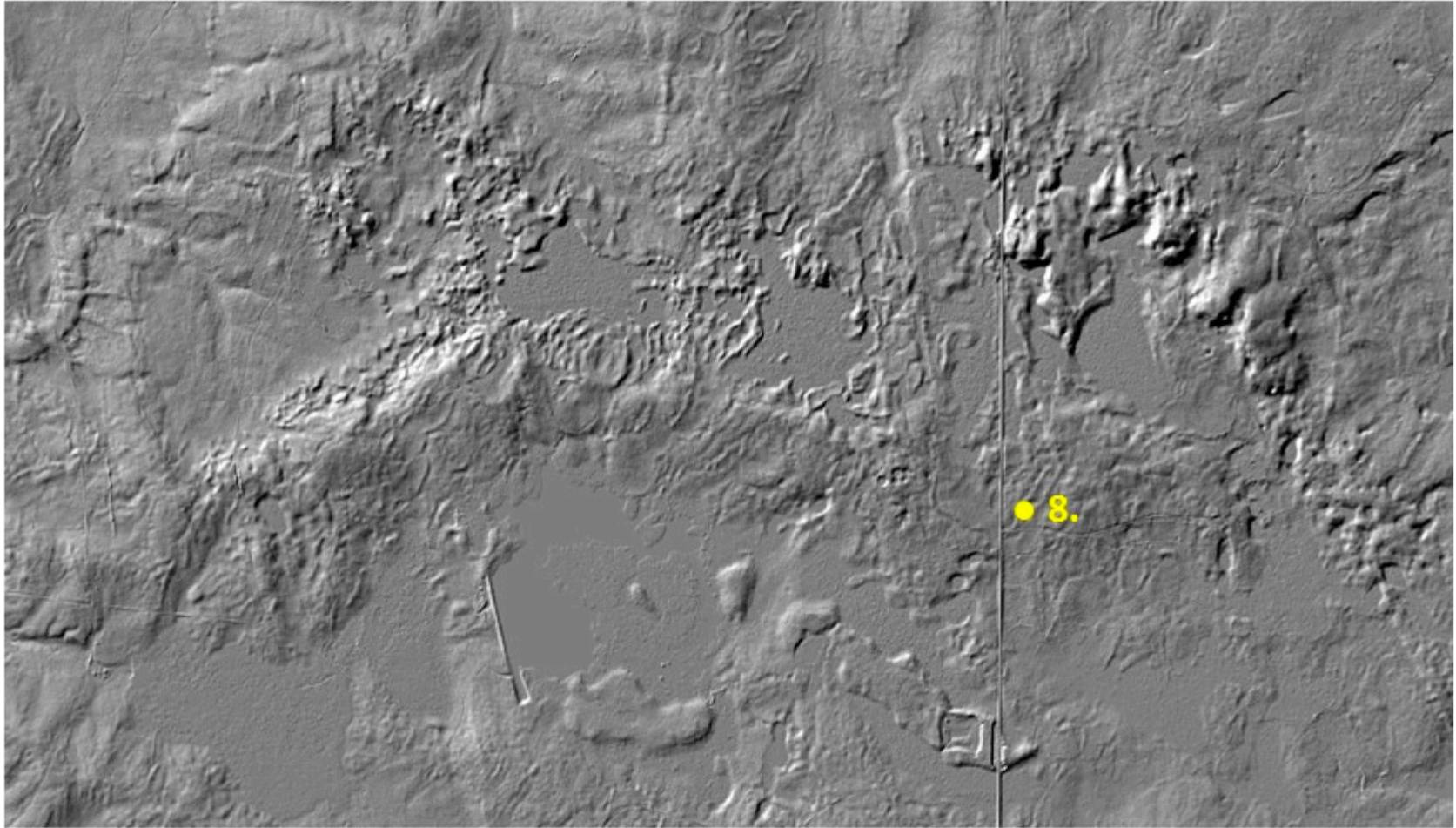


Stop 7. Gravel pit exposing sandy till of the Rainy lobe. Note the difference in the topography and vegetation compared to the sandy sediments of the Glacial Lake Sucre basin.



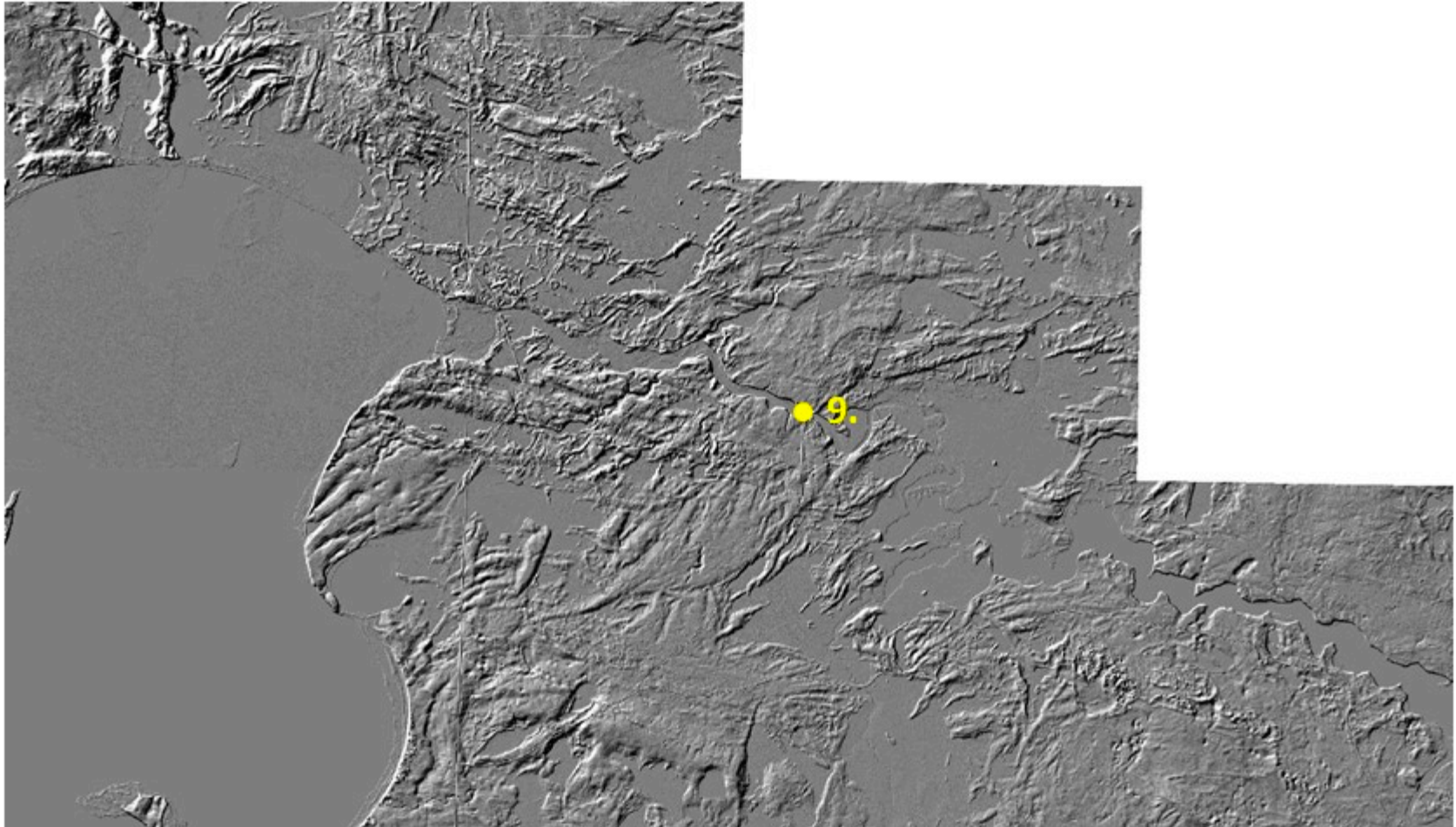


Stop 8. Cuba Hill is located on a low relief ice-stagnation complex of the St. Louis sublobe. We will examine the nature of the sediment and the corresponding vegetation.

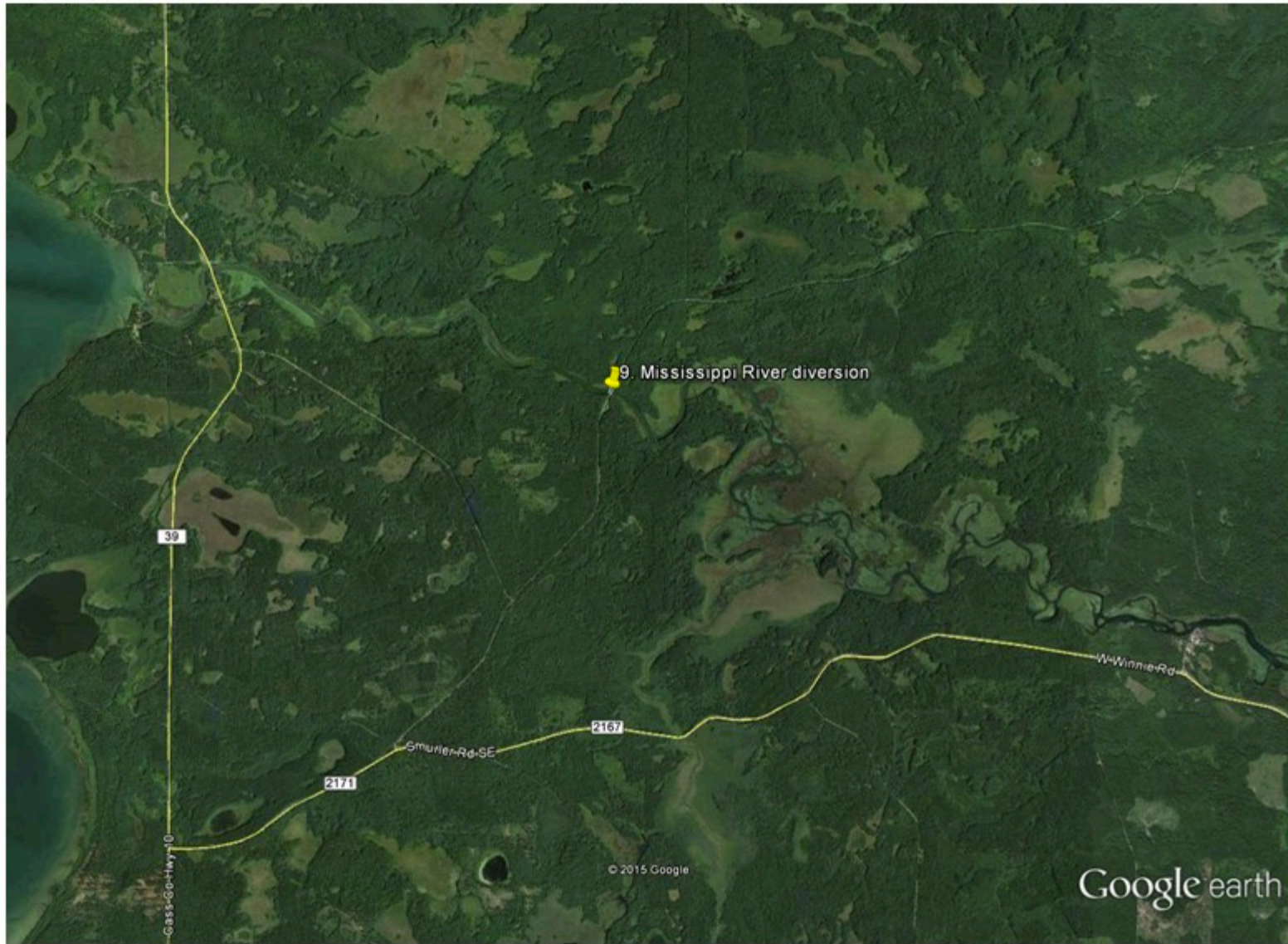


Stop 8. Close-up of the Cuba Hill area. Note in particular the round low relief features in this ice-stagnation complex of the St. Louis sublobe. These are ice-walled lake plains.



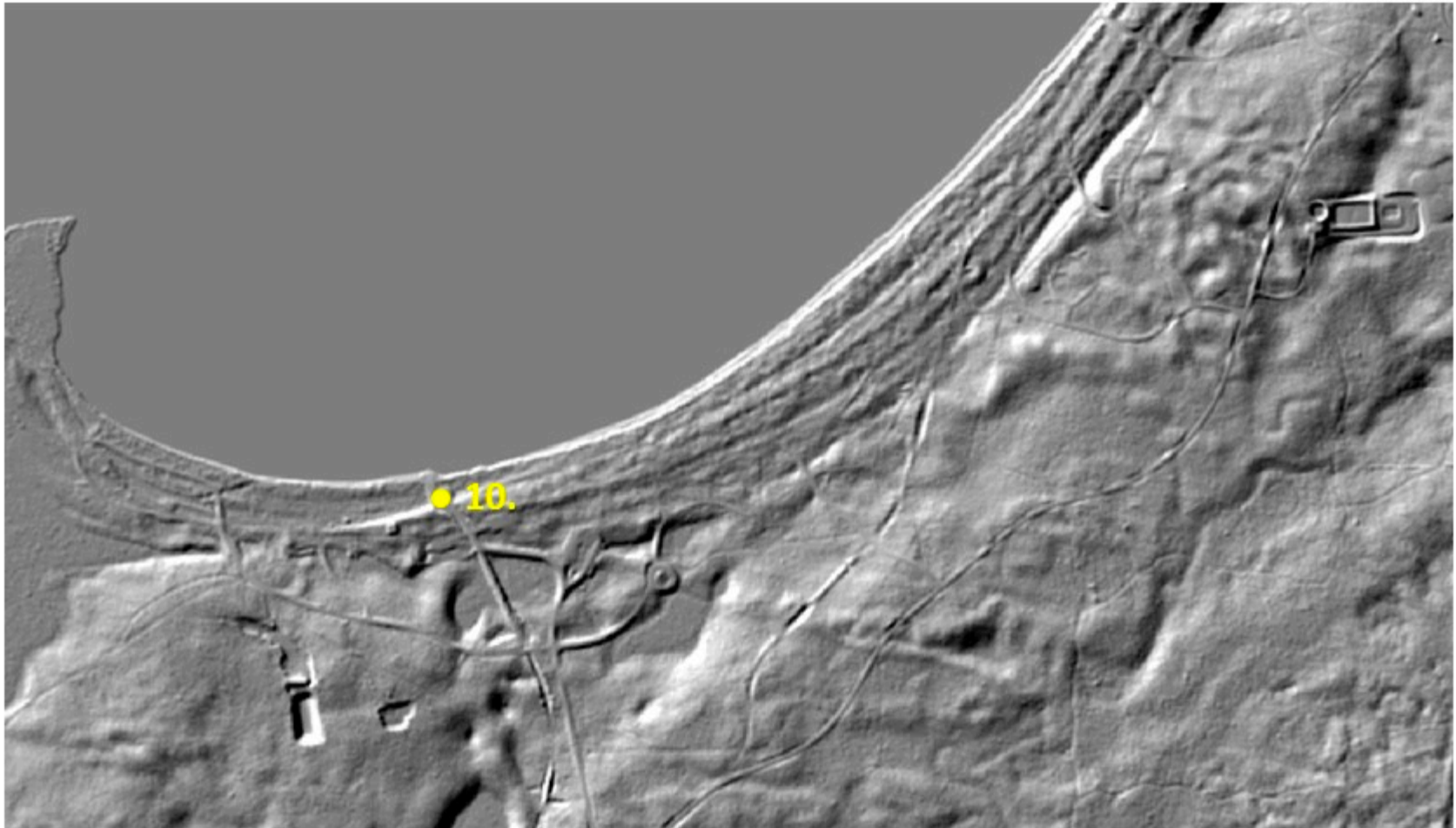


Stop 9. The Mississippi River. This bridge overlook will highlight the nature of the Mississippi River between Cass Lake and Lake Winnibigoshish.



Stop 9. Aerial photo of the Mississippi River between Cass Lake and Lake Winnibigoshish.





Stop 10. Norway Beach picnic area and boat landing. A good spot to see geological processes in action and to relax and summarize the field trip.