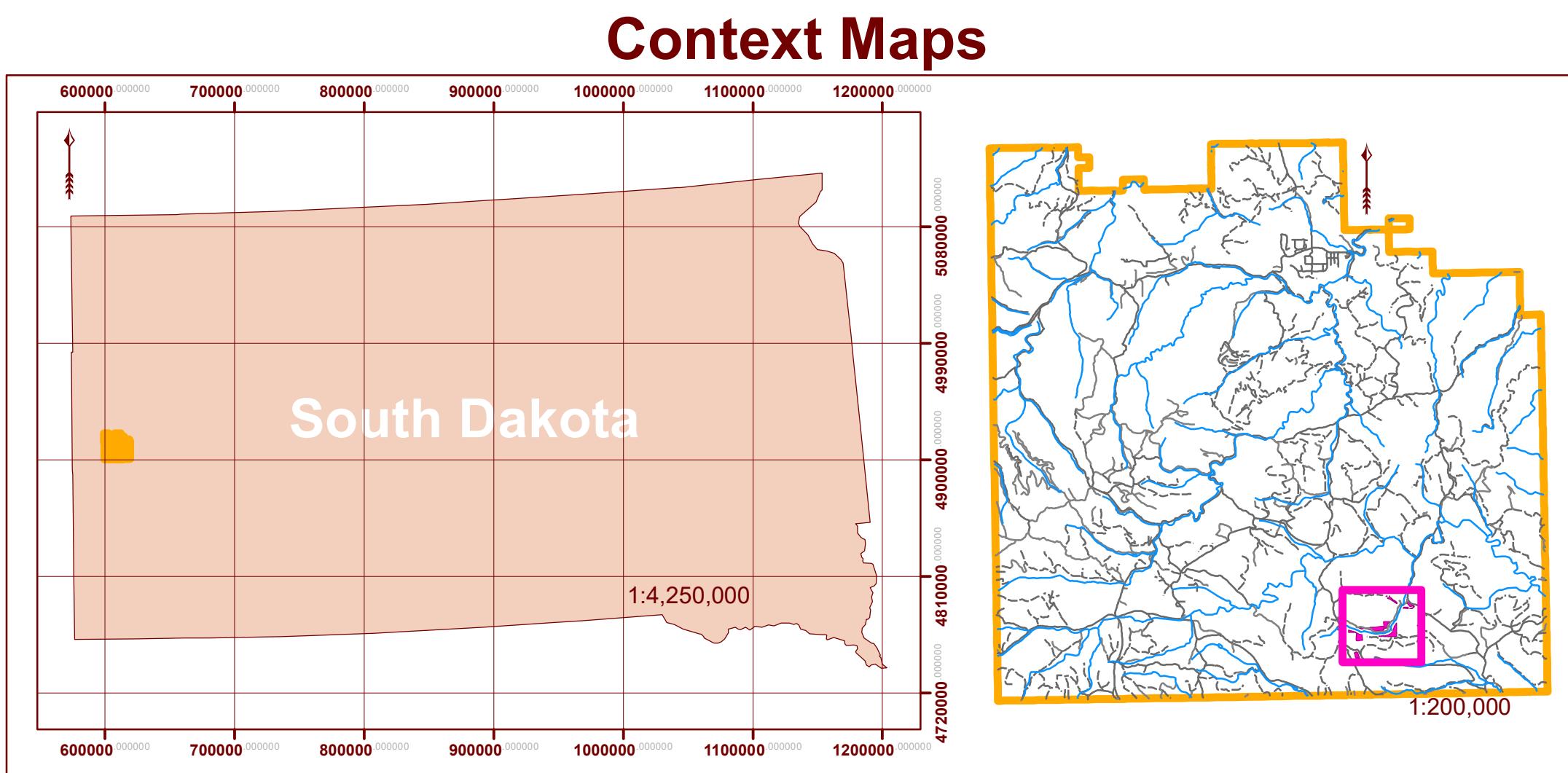
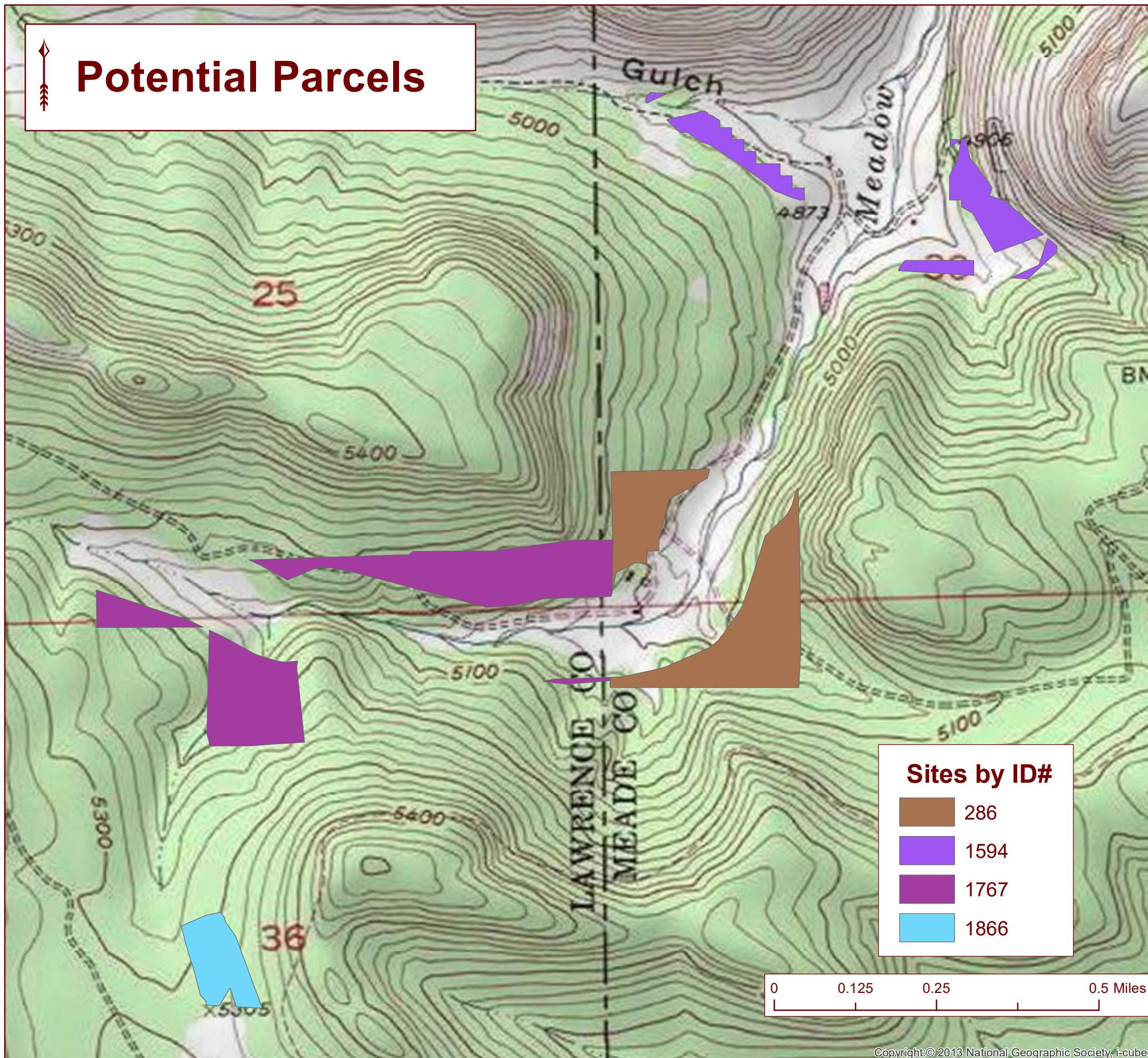


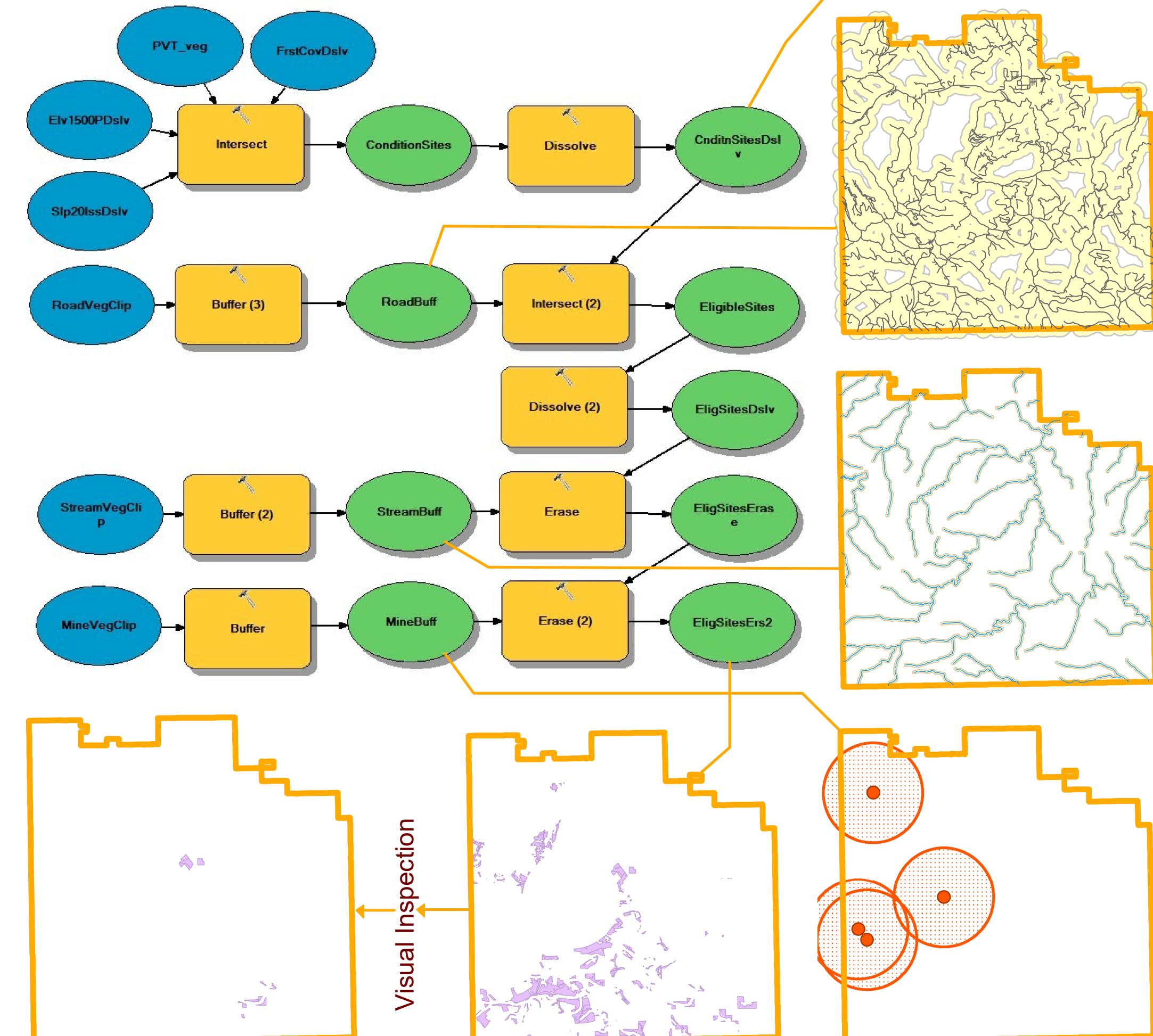
Lynn Songer's Dream Cabin: Geoprocessing Analysis to Identify Suitable Parcels



Geoprocessing

L. Songer requested an analysis to identify potential parcels for a Dream Cabin site. The analysis included roughly 148 square miles in the Black Hills National Forest southwest of Sturgis, South Dakota. Geoprocessing began with clipping data to the study area and creating layers by selecting-by-attributes for land that met the desired criteria of private land with a forested landcover, elevation of 1500 meters or greater, and a slope that does not exceed 20 degrees. Subsequent processing created buffers for proximity to roads (within 500 meters), Streams (no closer than 100 meters), and mines (at least 2 miles away). Potential sites were then intersected with the road buffer and dissolved by the stream and mine buffers. Finally, a visual inspection of each parcel was conducted to ensure that the final parcels were roughly one mile from neighboring homes while also not being prohibitively remote.

The analysis identified two clusters of potential parcels that suit the criteria. One cluster was eliminated due to access and remoteness concerns. The final cluster was selected for its superior accessibility and balance of isolation. The final cluster contains four parcels each with segments that meet the criteria. The parcels differ in accessibility, sense of remoteness, and geography (aspect, elevation, proximity to natural features) offering choice in the perfect site for the dream cabin.



Sources:
 Mines – Google Earth KML 2017 Visual identification.
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 USA_Topo_Maps (2009) [imported in ArcMap] National Geographic Society, i-cubed. Updated 2019. http://go.to.arcgisonline.com/maps/USA_Topo_Maps [accessed 3/4/2021]
 Imagery with Labels (2011) [imported in ArcMap] ESRI. Updated 2019. <https://www.arcgis.com/home/item.html?id=716b600dbbac433faa4bec9220c76b3a> [accessed 3/4/2021]
 Coordinate System: NAD 1983 UTM Zone 13N Projection: Transverse Mercator

Trevor Bruhn, 03/2021