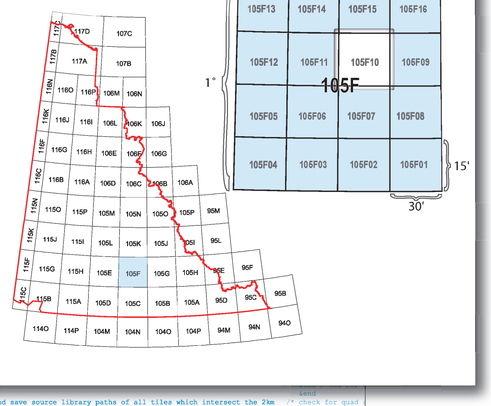
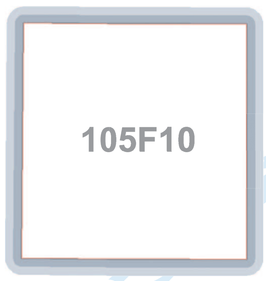
The Yukon DEM Project

Objective

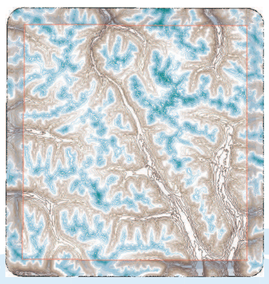
To generate a seamless 30 meter DEM for the Yukon Territory from the Natural Resources Canada's National Topographic Database (NTDB) base data. This entailed building a DEM with a small overlap for each of the 750 1:50,000 tiles which make up the territory.





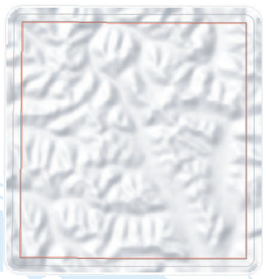
Created 2km, 1km, and 100m buffers

1



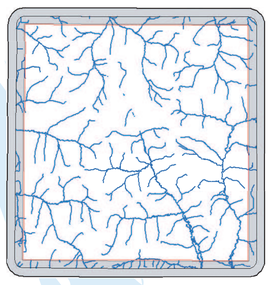
Appended adjacent contour coverages and clipped to 2km buffer

2



Generated quick and dirty 300 meter DEM, using only contours and without drainage enforcement (shaded relief shown)

3

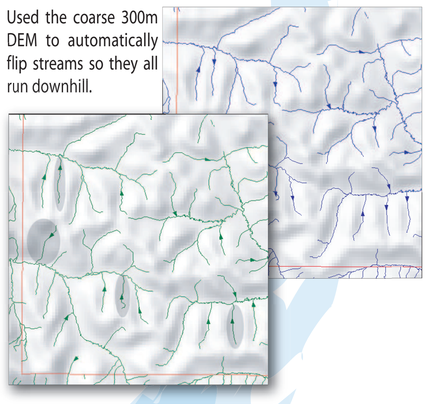


Watercourses were appended and clipped to 1km buffer

4

Used the coarse 300m DEM to automatically flip streams so they all run downhill.

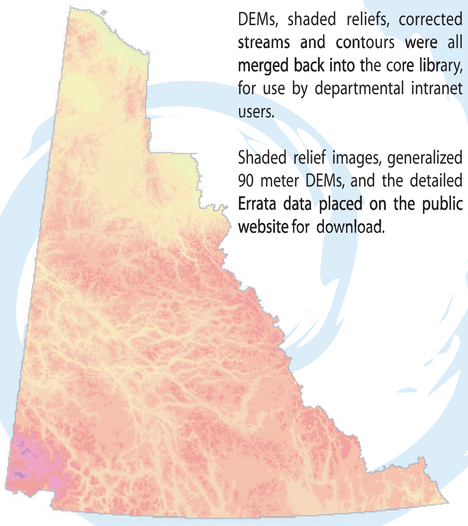
5



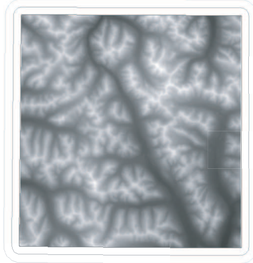
DEMs, shaded reliefs, corrected streams and contours were all merged back into the core library, for use by departmental intranet users.

Shaded relief images, generalized 90 meter DEMs, and the detailed Errata data placed on the public website for download.

10



Final 30 meter DEM, clipped to the 100 meter buffer, which leaves a 3 cell overlap for seamless mosaicking.

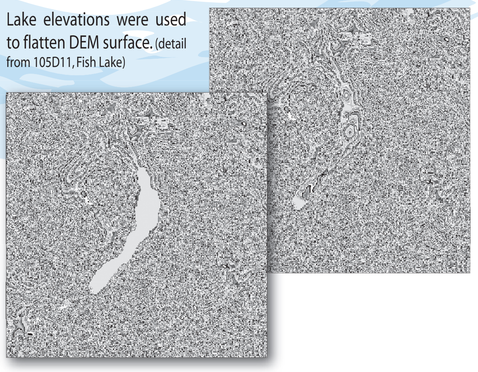


9

Final 30 meter shaded reliefs plotted and individually examined for errors.

8

Lake elevations were used to flatten DEM surface. (detail from 105D11, Fish Lake)

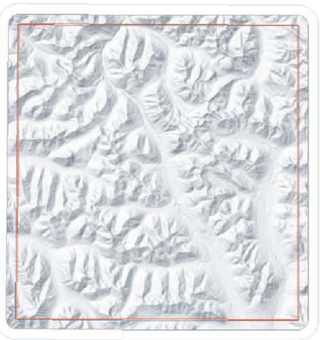


7

Errata

6

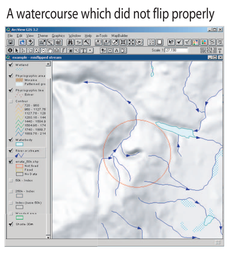
A full resolution DEM (30m) was built using all available data: contours, waterbodies and watercourses, with drainage enforcement turned on. A shaded relief image was generated and the quality assessment process begun. This stage accounted for a third of the total project.

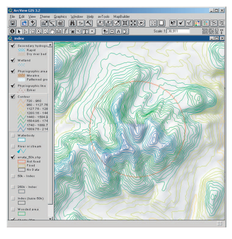


Lather, Rinse, Repeat

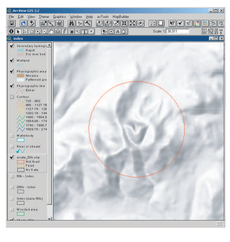
Fix all of the identified problems, recalculate the DEMs, examine reliefs, fix ...

A watercourse which did not flip properly





In this tile some contours were mistagged, rising in elevation when they should have been dropping.



Yukon Renewable Resources

GIS