

# Differentiating Yukon Digital Elevation Models

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## Overview

Data Currency	Name	Use with
2015+	Yukon Elevation Mosaic	Various
1990s	Yukon 30m DEM v1	National Topographic Database (NTDB) vectors
2000s	YT-CDED (YT 30m DEM v2)	Canvec (corrected NTDB), consumer GPS, Landsat
2010s	CDEM	National scale or multi-province/territory projects

## Yukon Elevation Mosaic

The Yukon Elevation Mosaic is continually updated. It's comprised of 16 metre and 30 metre CDEM tiles for territory-wide coverage, 150 centimetre and 5 metre for the areas covered by stereo satellite imagery, and 1m or better for areas covered by LiDAR. Provided by **Geomatics Yukon** (Yukon government department of Highways and Public Works).

Overview page	<a href="http://www.geomaticsyukon.ca/data/imagery-and-elevation-data">http://www.geomaticsyukon.ca/data/imagery-and-elevation-data</a>
Browse/Visualization	<a href="http://mapservices.gov.yk.ca/GeoYukon/">http://mapservices.gov.yk.ca/GeoYukon/</a>
Bulk download	<a href="ftp://ftp.geomaticsyukon.ca/Elevation/">ftp://ftp.geomaticsyukon.ca/Elevation/</a>
Service	<a href="http://mapservices.gov.yk.ca/arcgis/rest/services/ImageServices/Elevation/ImageServer">http://mapservices.gov.yk.ca/arcgis/rest/services/ImageServices/Elevation/ImageServer</a>

## Yukon 30m DEM

This product was built circa 2000 and is most suitable for use with the National Topographic Database and other datasets from the same time period (roughly 1970-2002).

<http://files.environmentyukon.ca/2001/> (interim location)

## Yukon Canadian Digital Elevation Database (YT-CDED)

The *Yukon Canadian Digital Elevation Data* was built in 2001 and is suited for use with CanVec, LandSat, GPS and other instrument based data. This product also called '*Yukon 30m DEM v2*'. It is distributed as 16m and 30m pixels depending on area, however the nominal scale for all is 30m.

<http://files.environmentyukon.ca/2002/> (interim location)

## Canadian Digital Elevation Database and Canada Digital Elevation Model (CDED and CDEM)

YT-CDED is incorporated into the national CDED and distributed from Geogratis.gc.ca. CDEM is a resampled CDED (in the Yukon, other regions may have different handling).

CDED bulk	<a href="http://ftp.geogratis.gc.ca/pub/nrcan_rncan/archive/elevation/geobase_cded_dned/">http://ftp.geogratis.gc.ca/pub/nrcan_rncan/archive/elevation/geobase_cded_dned/</a>
CDEM bulk	<a href="http://ftp.geogratis.gc.ca/pub/nrcan_rncan/elevation/cdem_mnec/">http://ftp.geogratis.gc.ca/pub/nrcan_rncan/elevation/cdem_mnec/</a>
CDEM service	<a href="http://maps.canada.ca/czs/index-en.html">http://maps.canada.ca/czs/index-en.html</a>

#### Important notes:

- The YT CDED is distributed in the same coordinate system it was built in, while the national CDED has been projected to geographic long-lat (it's been resampled).
- CDED and CDEM have vertical units truncated to the nearest metre. YT CDED is floating point and retains sub-meter numerals. This doesn't mean it's accurate to sub-meter, it's not, but truncating does have marked negative effect on slope calculations among others (more on that [here](#)).
- The data are distributed with 16m pixels but the nominal scale of the source for all three products is still only 30m at best. (16m dimension is dictated by the file format and not inherent data properties).

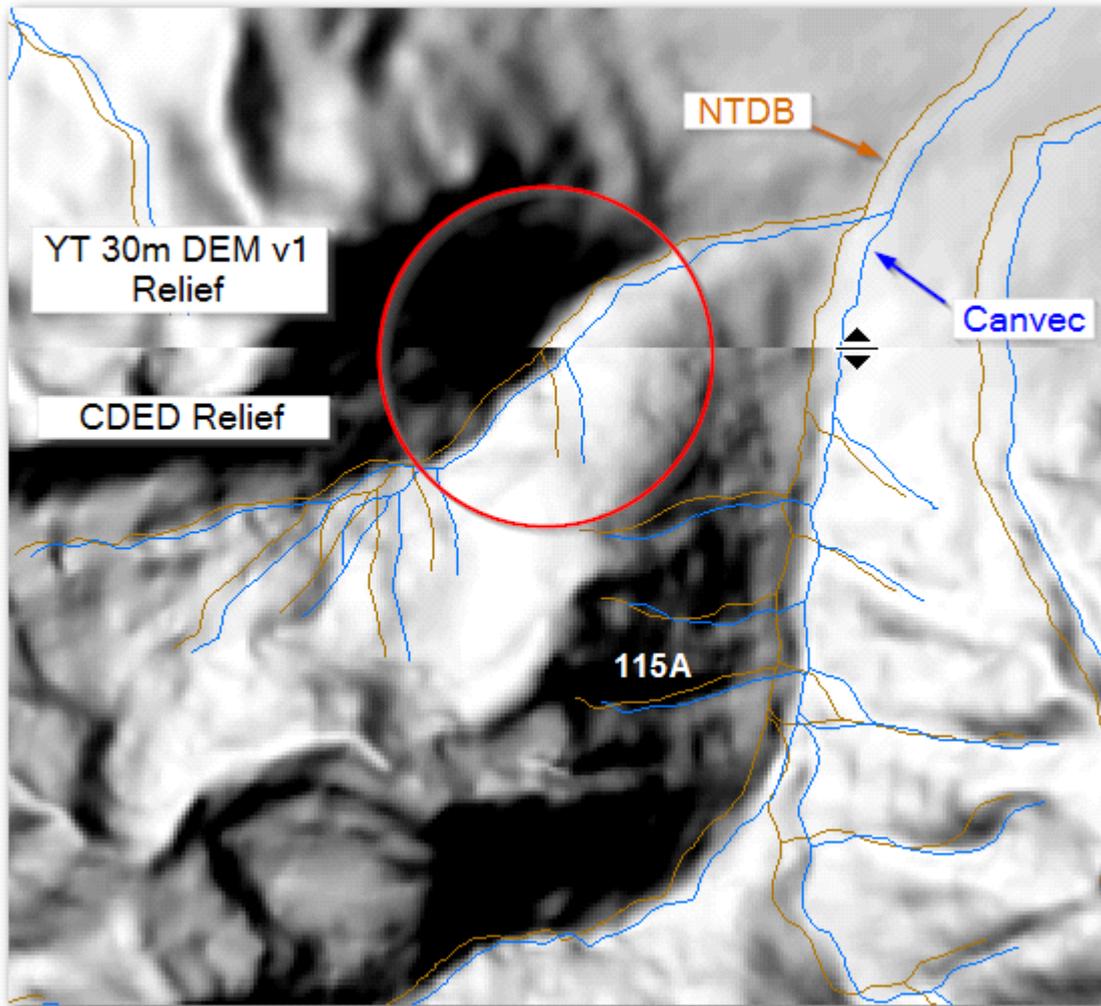
## Differentiating

Canvec vector data was rubber sheeted to match Landsat 7 to within 30 meters. For many places in the territory the difference is negligible to non-existent, however a few locations have shifted up to hundreds of meters horizontally.

If you are given 2 DEM files for, say 115A, and don't know which is which:

- Generate a shaded relief image for each one
- Load the 1:50,000 watercourse layers for each of NTDB and Canvec
- Look for the best stream alignment

In this image the top half is v1 relief and the bottom v2 relief, with shadows accentuated. In the circled area, see how the watercourses hold to the shadow line faithfully for each source. V1 matches NTDB and CDED matches Canvec. The horizontal displacement shown is about 100m.



Comparing CDED with CDEM note the marked resampling artifacts on the right:

