



What is a good estimate of the Greenland ice sheet's volume?

Open the Processing Toolbox by clicking on the gear icon in the Attributes Toolbar. If you do not see this toolbar, right click in the toolbar area and toggle it on.

Go to 'Raster analysis' --> 'Raster surface volume'. This is an algorithm that calculates the volume under a raster grid's surface. Fill in the following parameters:

- Input layer = Ice thickness (500 m)
- There will only be one option for Band number
- Base level = Should already be set to 0 This is the minimum pixel value in the Ice thickness layer.
- Method = Count only above base level (since we are interested in ice thickness values greater than zero)
- Save the Surface volume report, the output for this algorithm, in a temporary file or in a desired location on your computer.

Click 'Run' and close the window.

View the Results

You should see a panel underneath the Processing Toolbox called Results Viewer, which will direct you to the location of the results html file for this calculation. Open the file. The results file should contain three numbers: volume, pixel count, and area. The volume is the volume of the Greenland ice sheet in units of cubic meters.

Results

Based on this QGreenland dataset, a good estimate of the Greenland Ice Sheet's volume is 2,947,732,015,000,000 m³, or about 2.9 million km³.

For more from Querying with QGreenland, visit <https://qgreenland.org/learn-and-teach>.

