this .pdf is in colour at: http://library.uvic.ca/site/staff/danielbm/documents/AcmlaCartoRasterHandout5.pdf

Step I. QGIS/GRASS Raster functions set-up:

A) right-click in Toolbar area; Select: Layers; Manage Layers; Map Navigation; Attributes; (GRASS may not appear)
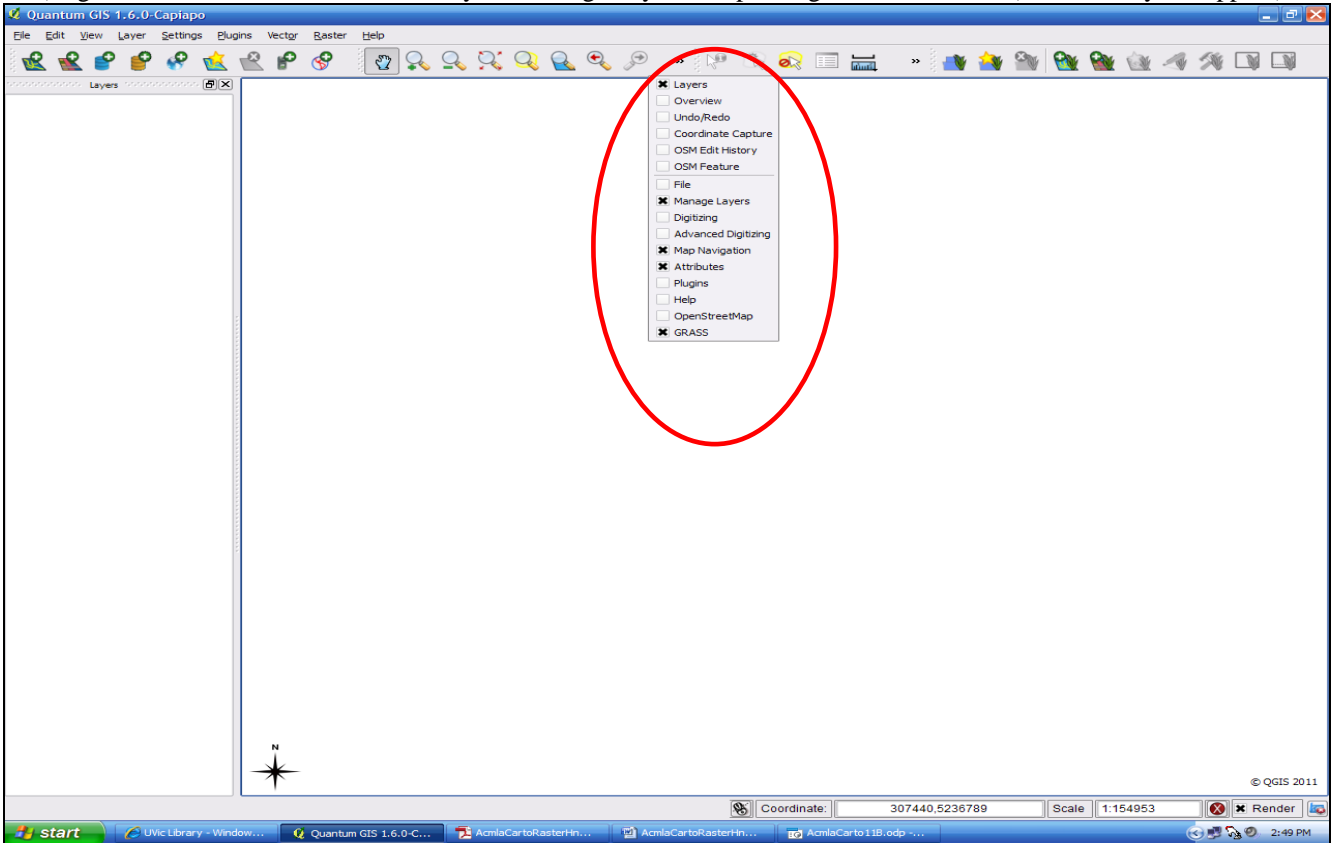
De-select other tool bars.   -Move the tool bars to match the screen shot (with the exception of the GRASS tool bar)

B) if "Raster" appears in the menu bar, this step is not necessary; go to **C**)
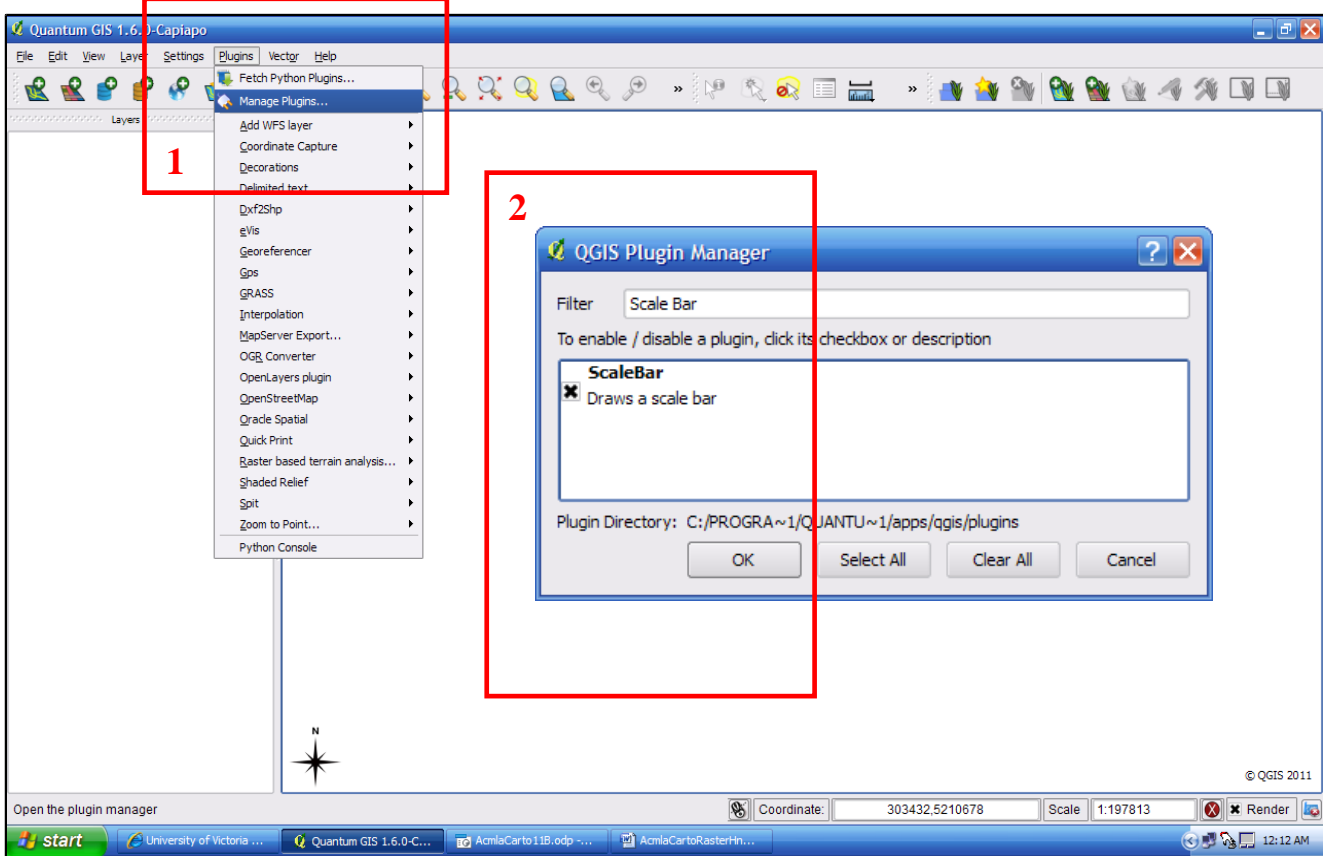
    1. manage Plug-ins   2. Filter for GDAL & select   (Georeferencer is another plug-in)
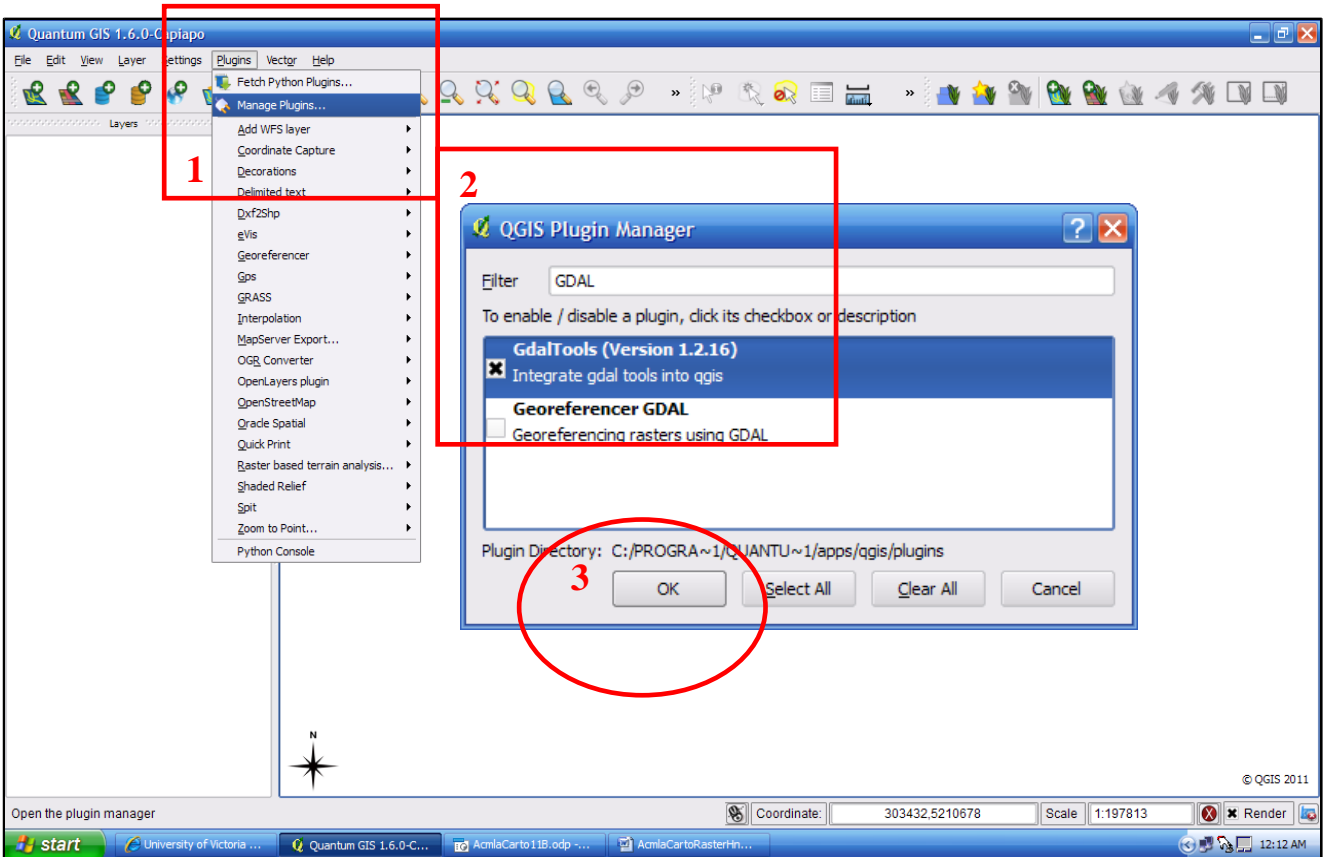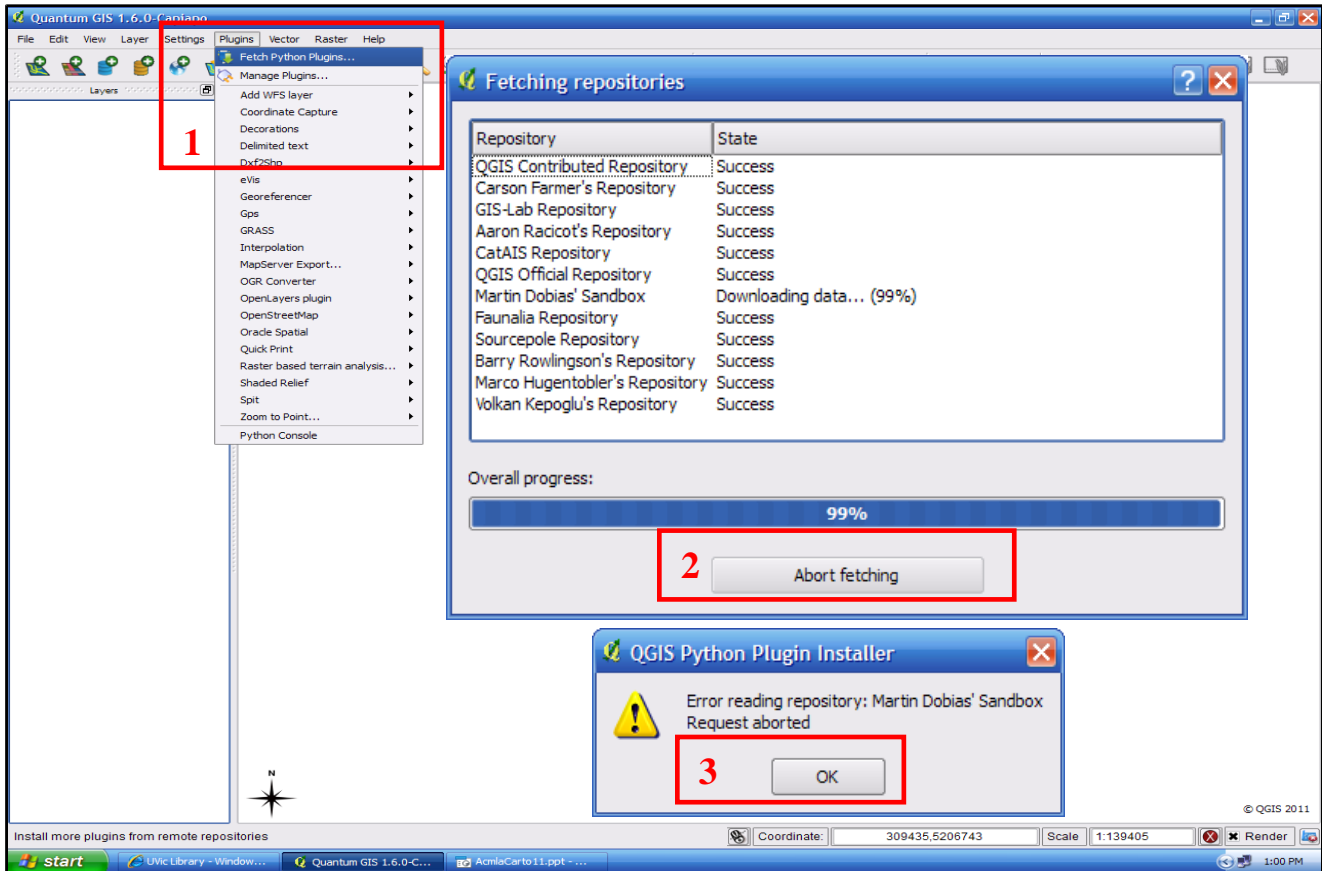

("Raster" will now appear in menu bar if it was not there before.)   1

C) Add scale bar
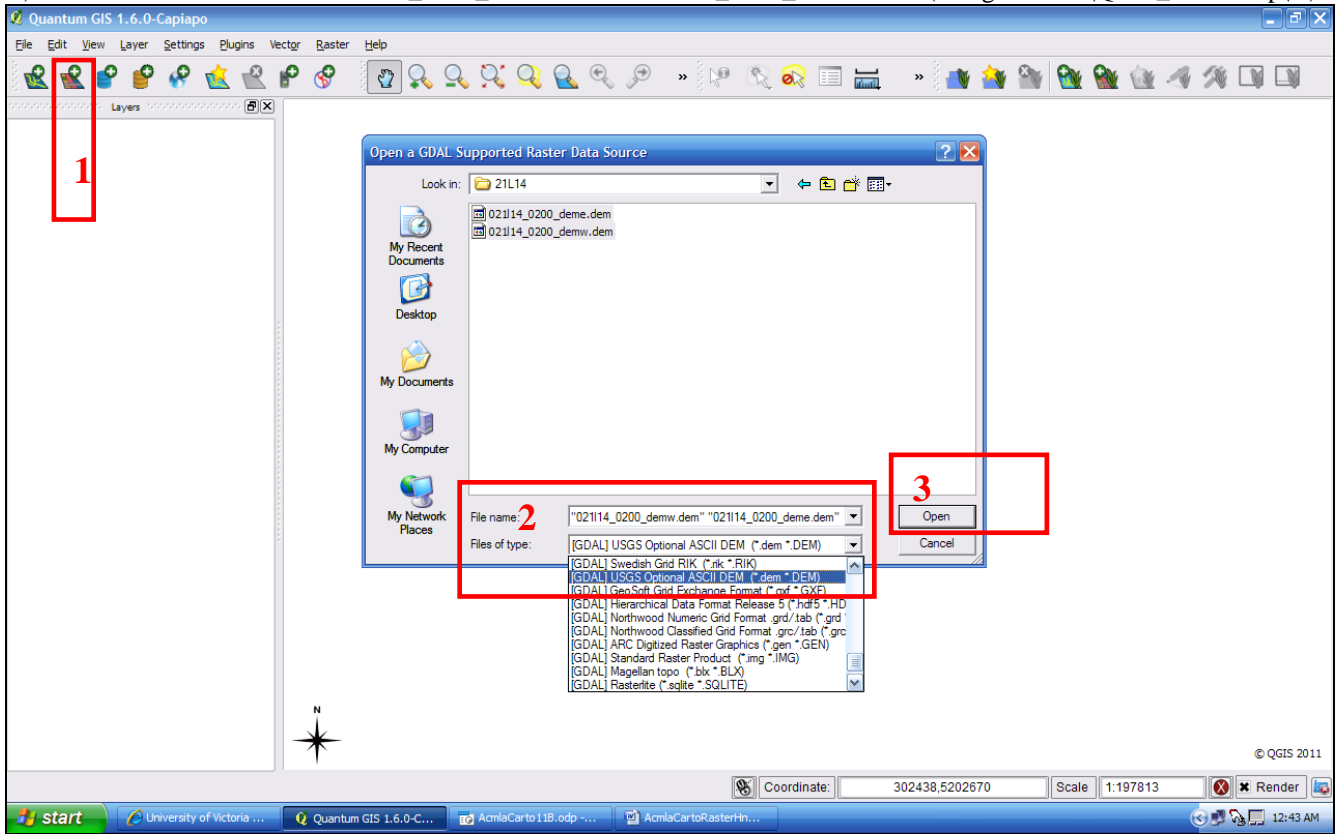   **1. manage Plug-ins   2. Filter for Scale Bar & select**

We may have to "fetch Python Plug-ins"; (IF you get this screen; do as suggested); otherwise ignore.
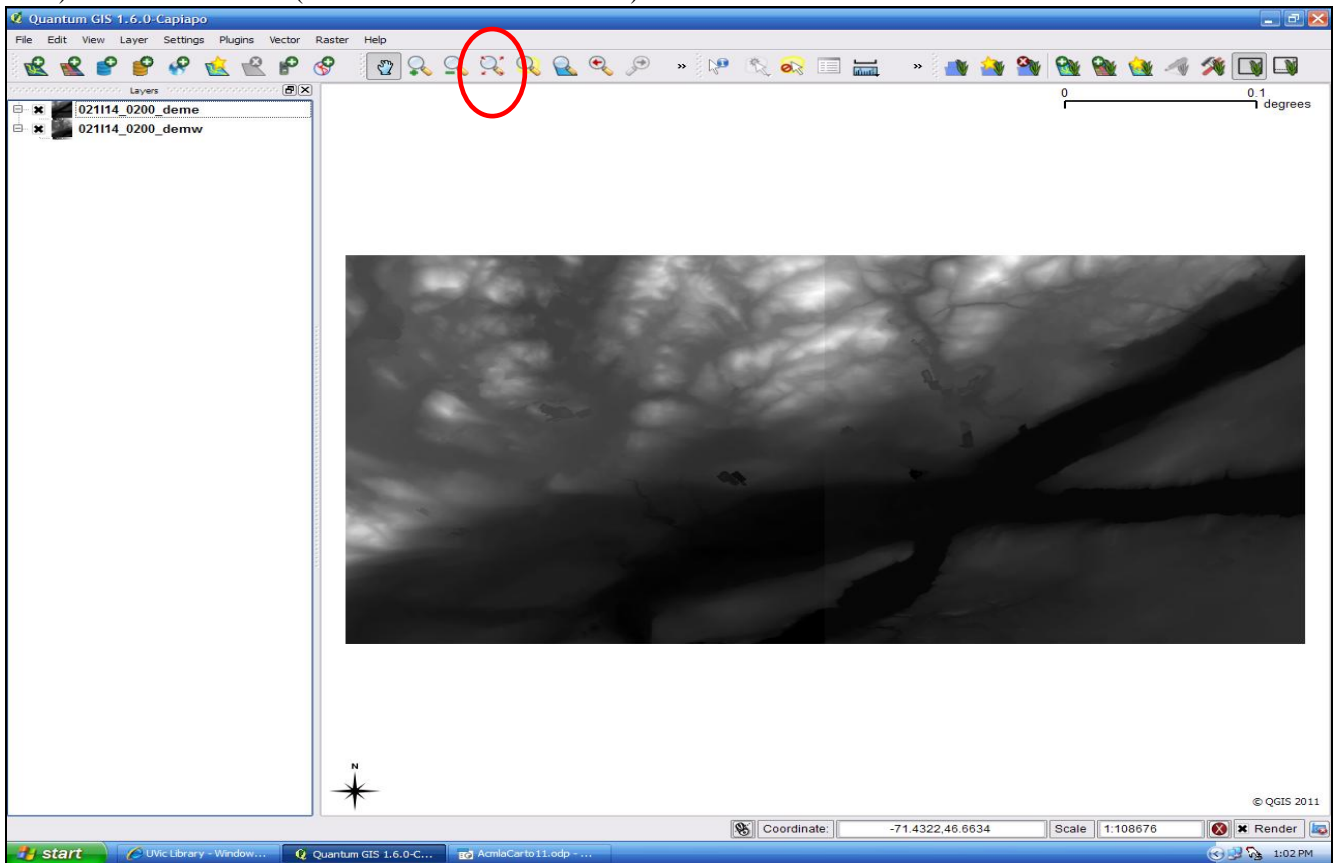

(Ask for assistance anytime!)

II. Merging Raster files

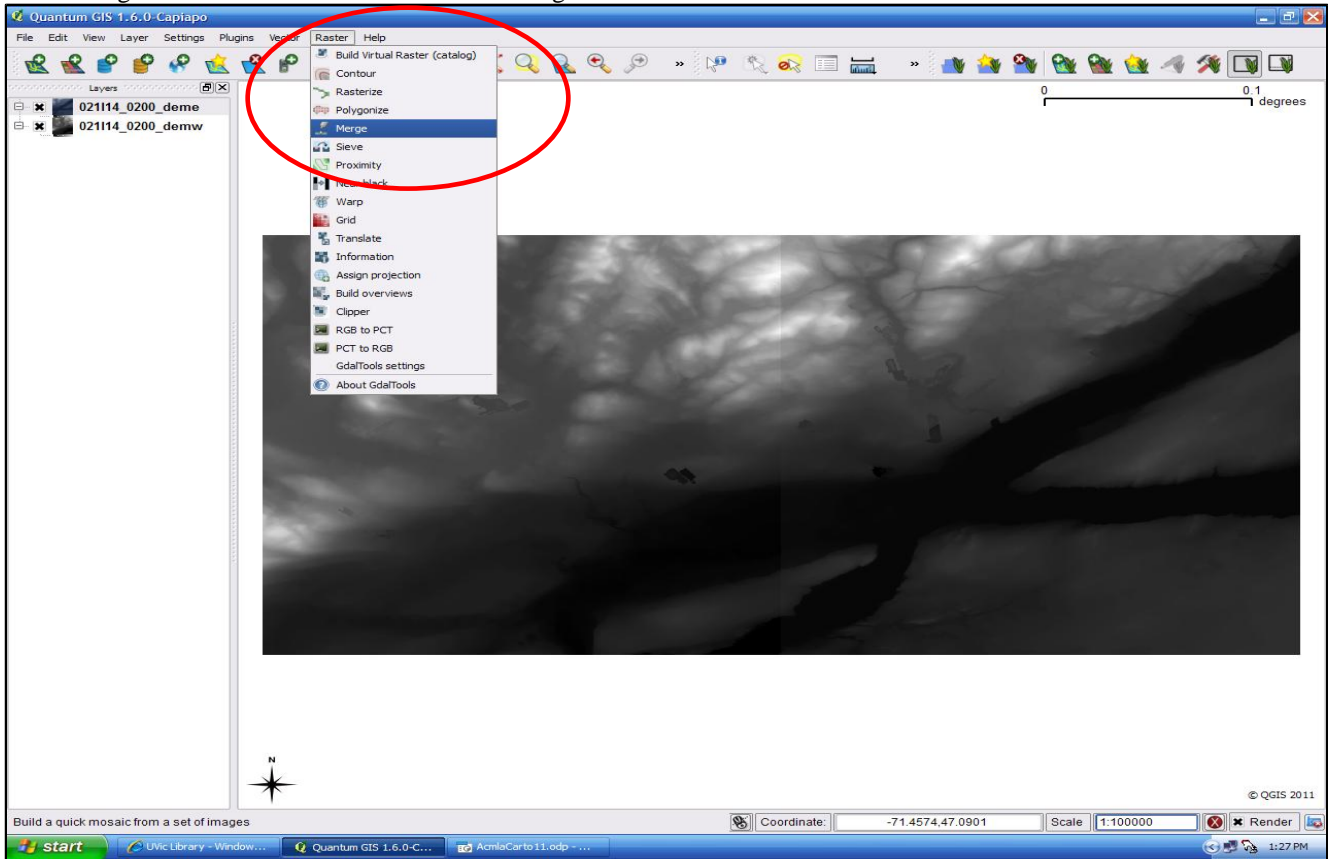**A**) 1. select add Raster & add 021L14_0200_deme.dem & 021L14_0200_demw.dem (navigate to D:\QGIS_Workshop\...)

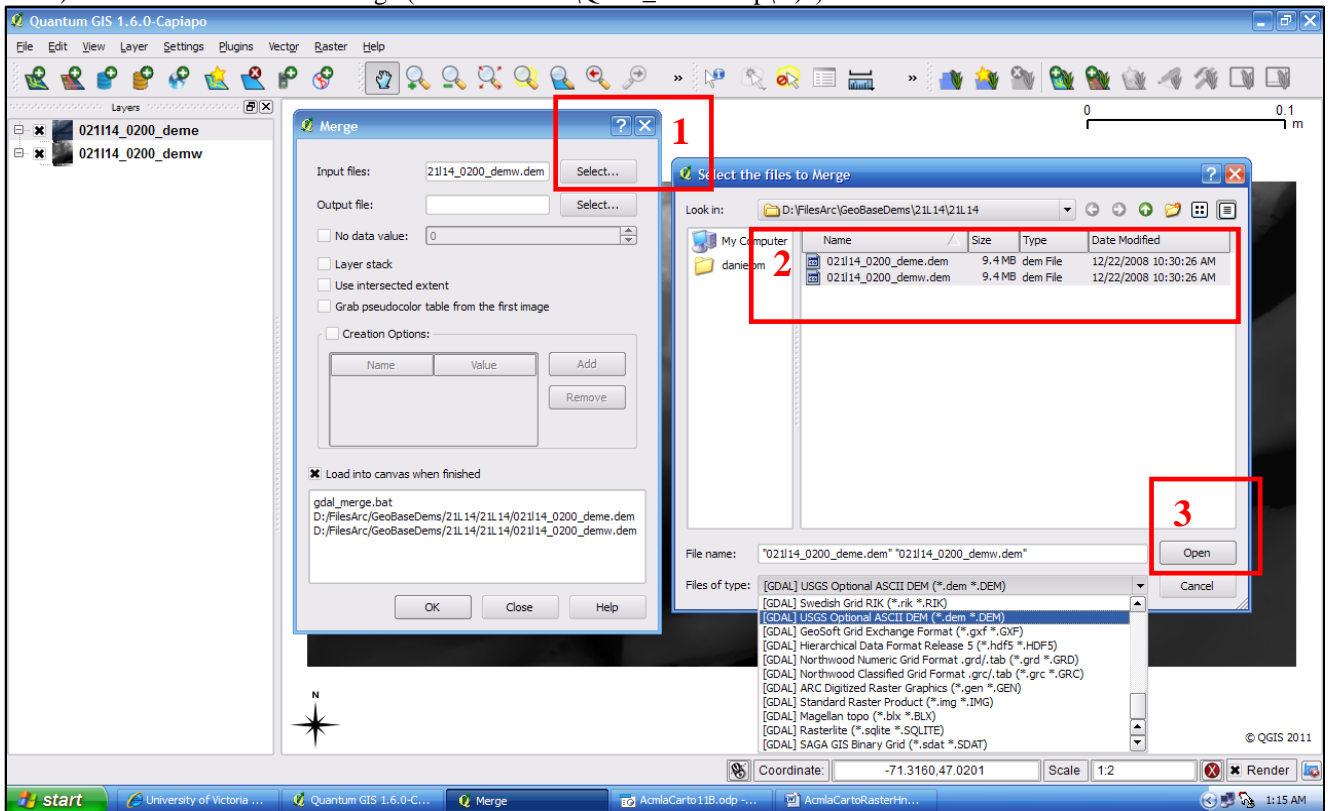**B**) Zoom to full extent: (note the "line" between rasters)

(II. Merging Raster files, con't)

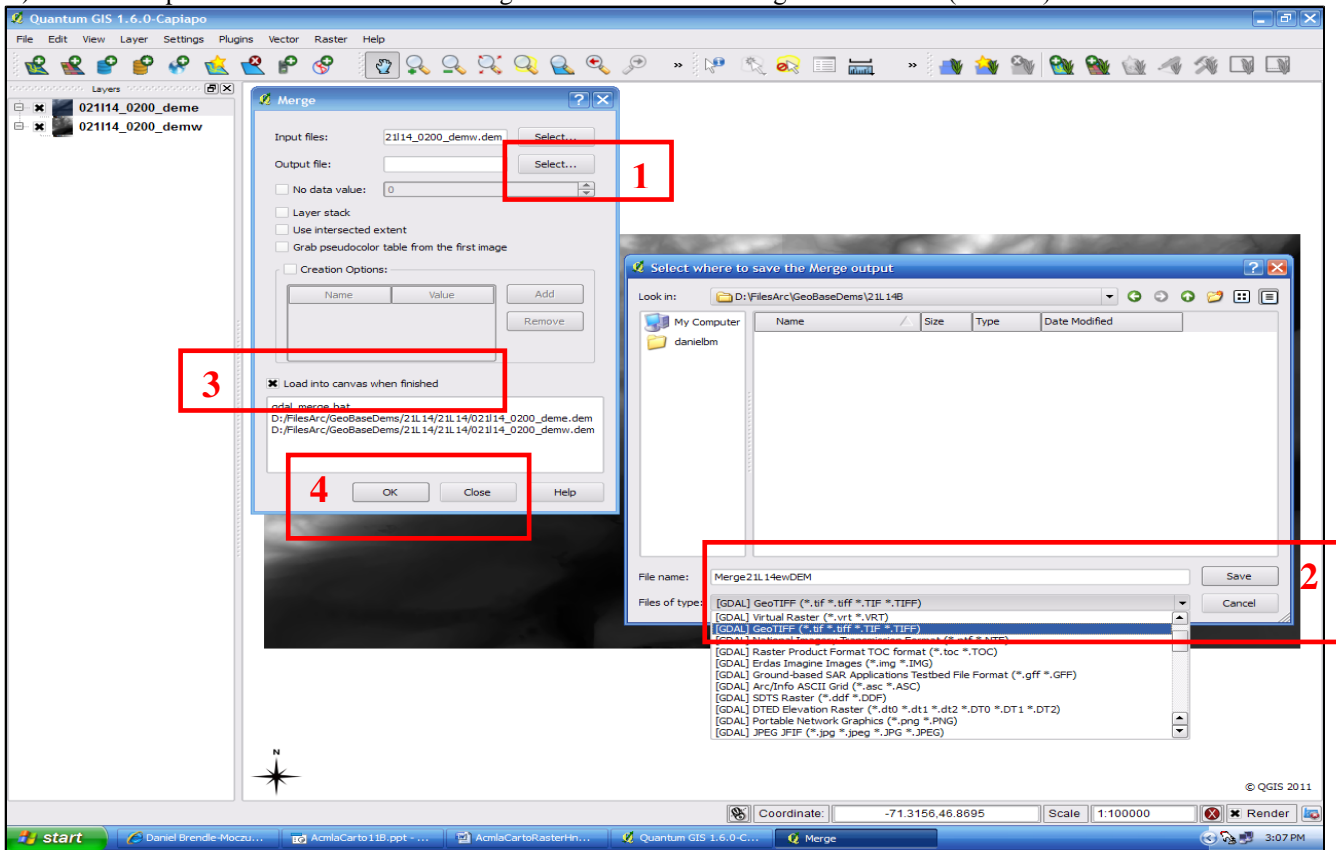   **C**. Merge the loaded DEMs: select Raster - Merge

D) 1. select the 2 DEMs to merge (from drive" D:\QGIS_Workshop\...)"): 2. Ctrl-Click to select both of them
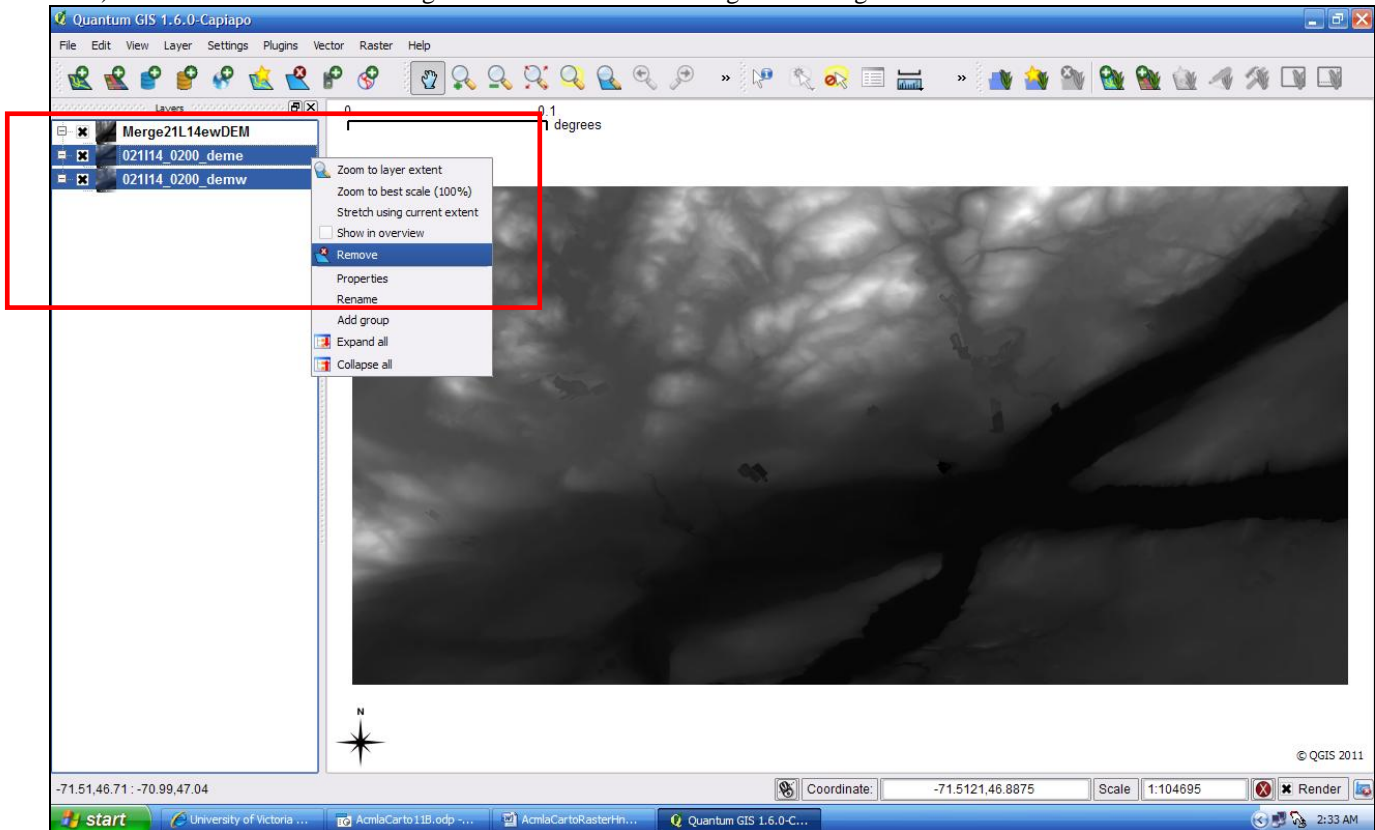

-accept the defaults (I've experimented and think the defaults work best) ("Help"from GDAL is available)

(II. Merging Raster files, con't)

E) 1. select output file to Title & Save the merged DEMs as…   2. "Merge21L14ew.tif" (GeoTiff)   3. Load onto canvas
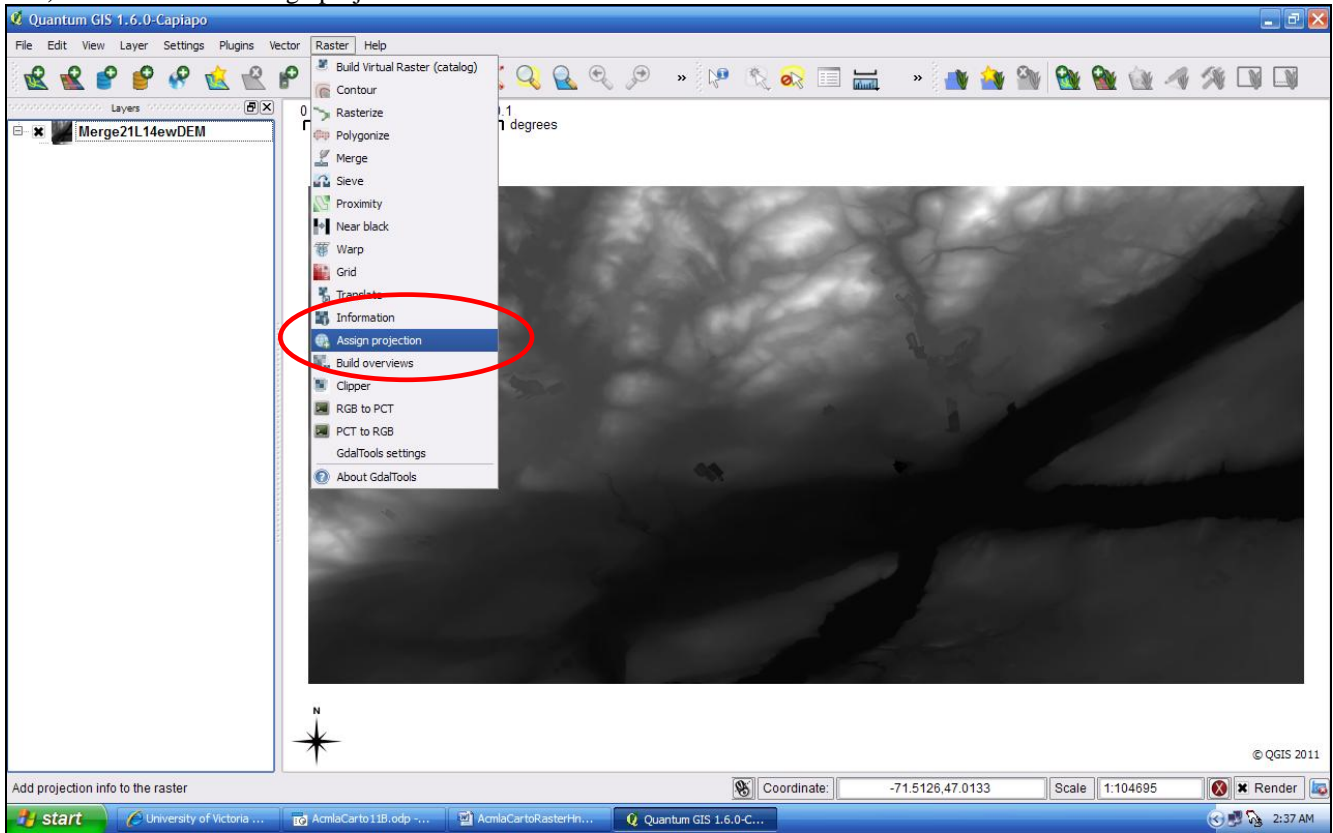

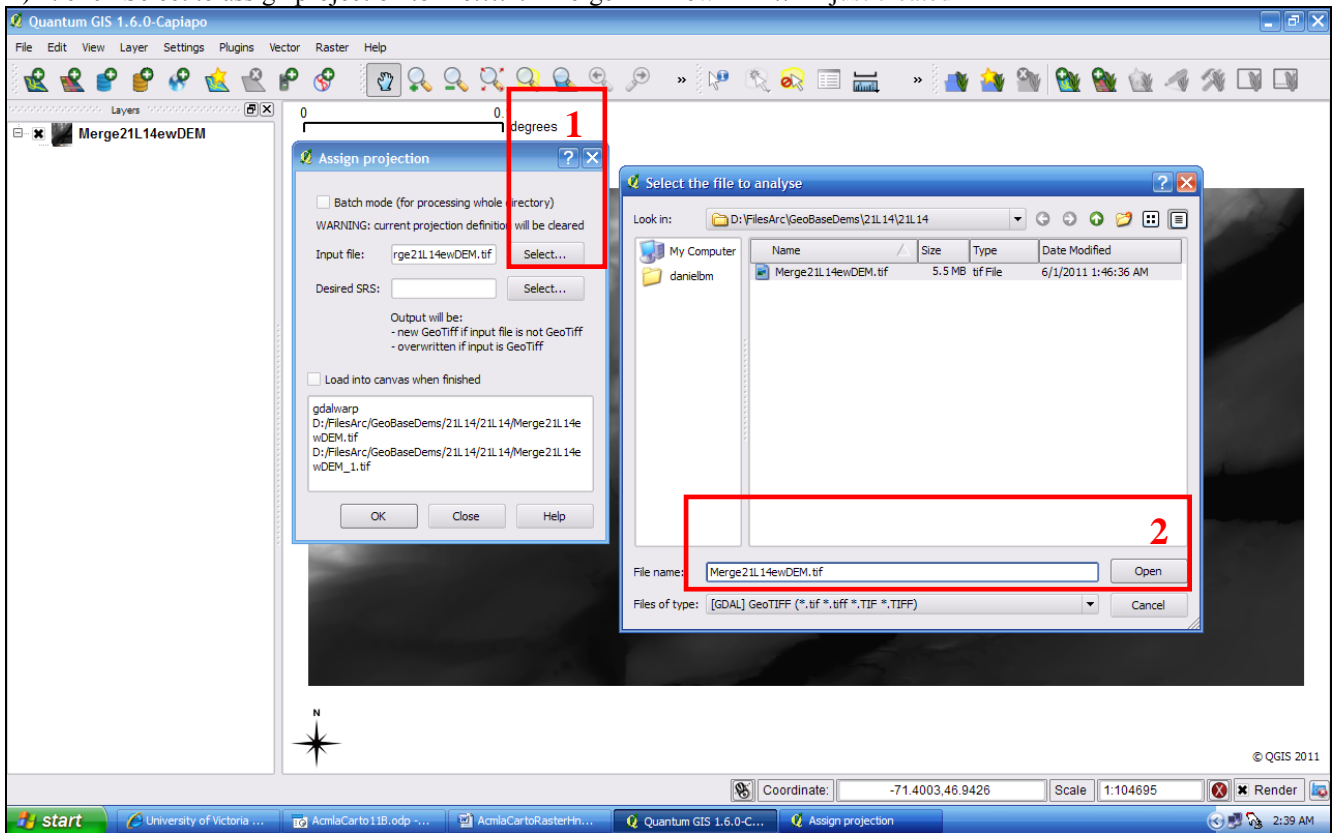**F)** Ctrl-Click to select & then right-click to remove the 2 original unmerged DEM files

III. Assign Projection to raster file
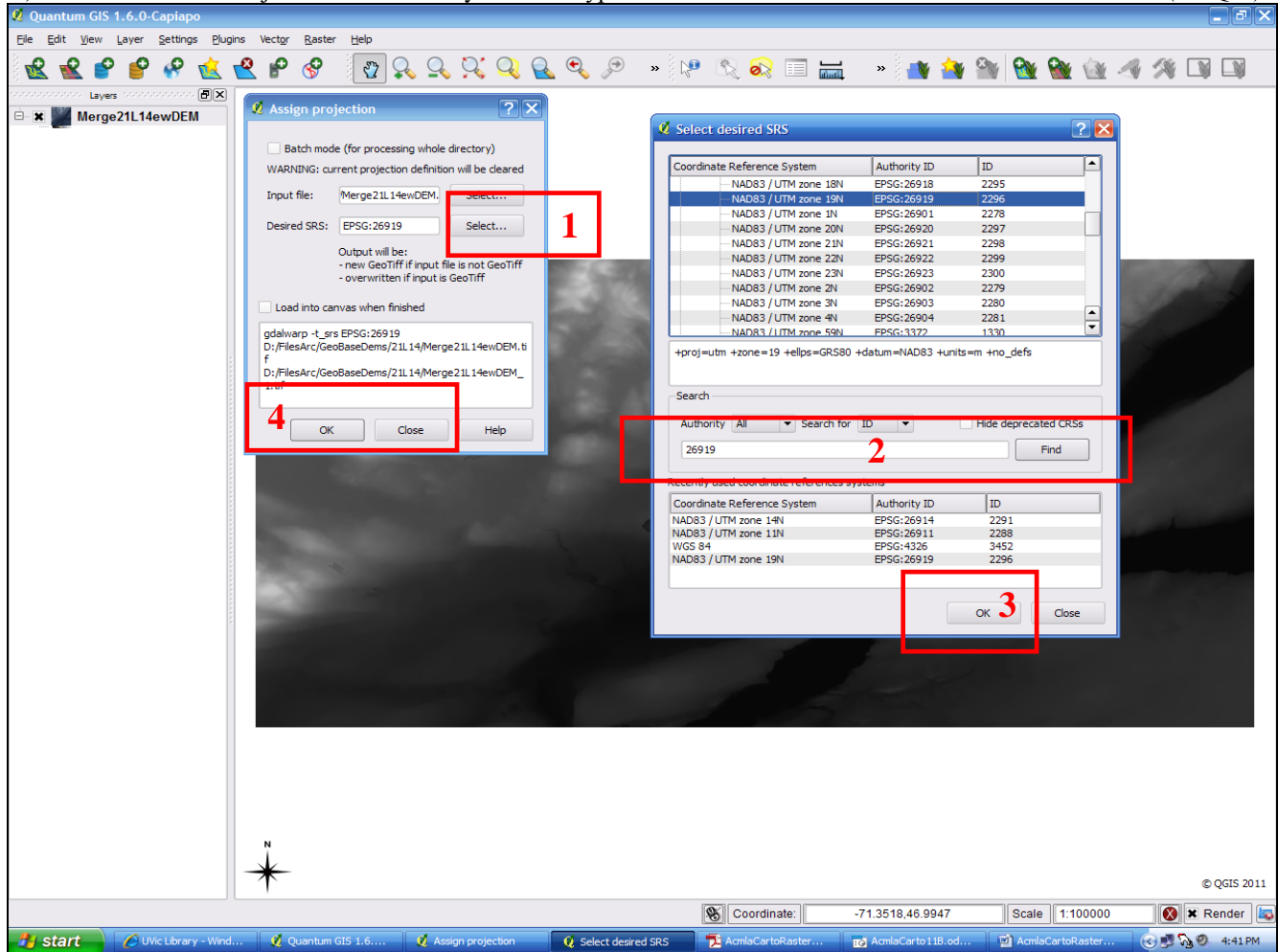**A)** select Raster – Assign projection

B) 1. click Select to assign projection to file….2. "Merge21L14ewDEM.tif" just created
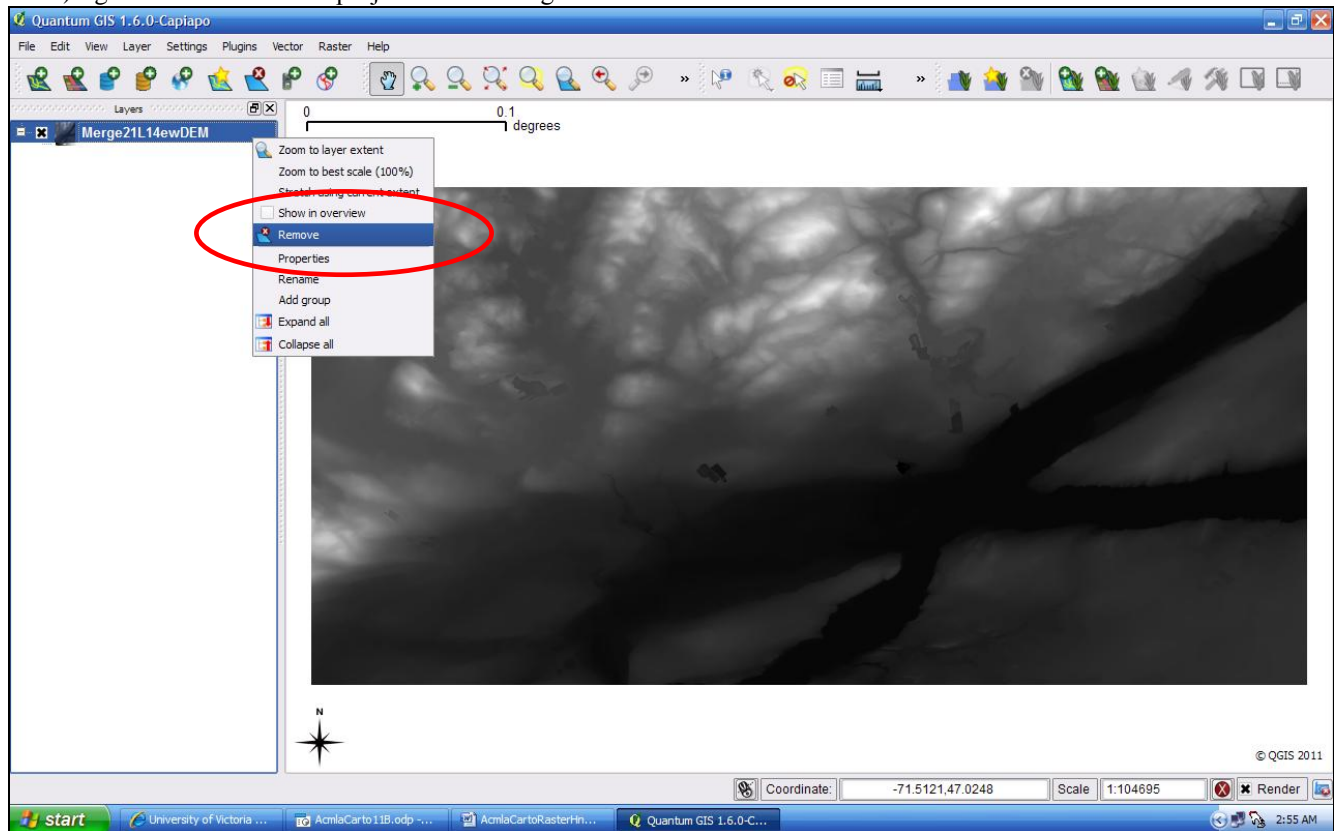
(III. Assign Projection to raster file, con't)

C) 1. click Select for Projected Coordinate System   2. Type "26919" & click "find" for NAD83 UTM zone19N (for Que)
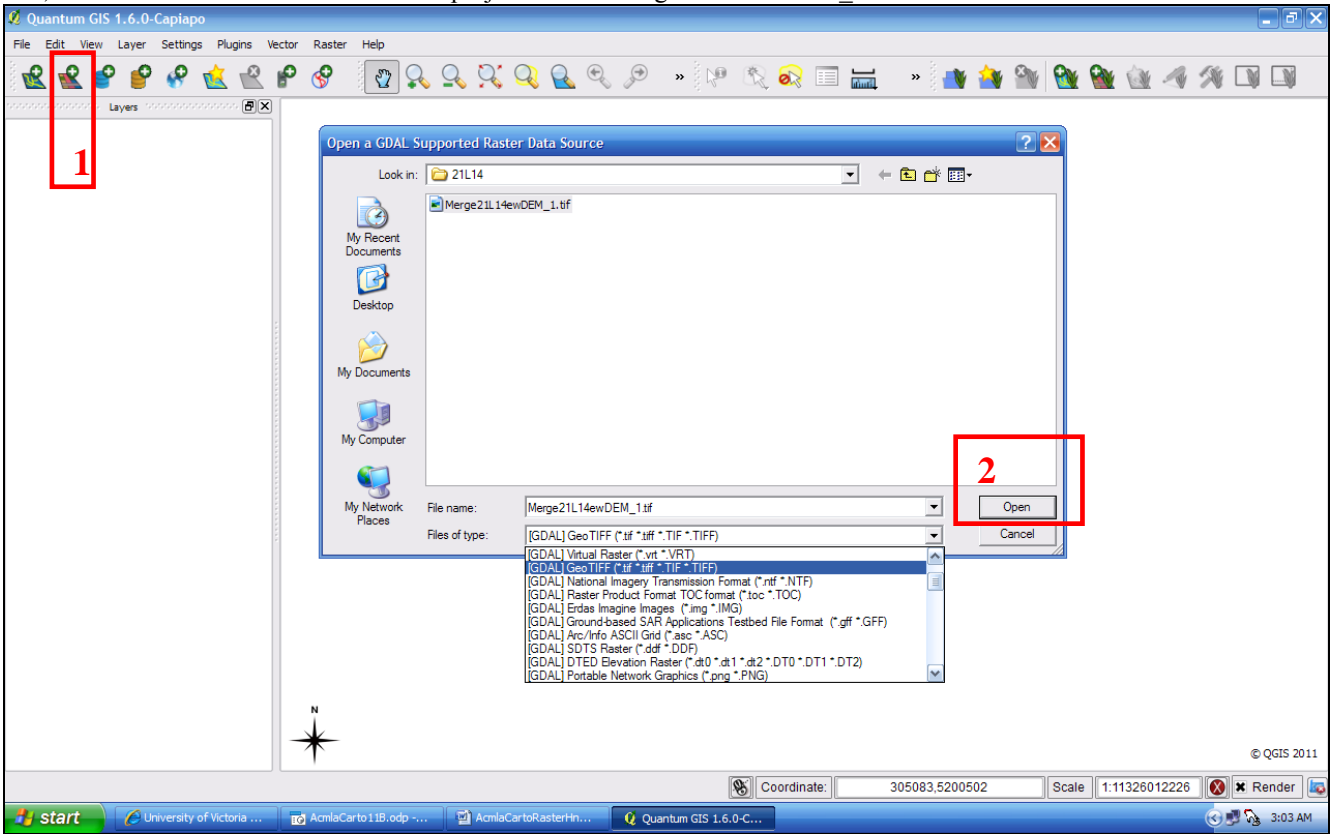

-You may be asked to click "OK" and "Close" again; do so. (EPSG authority IDs are very handy at times.)

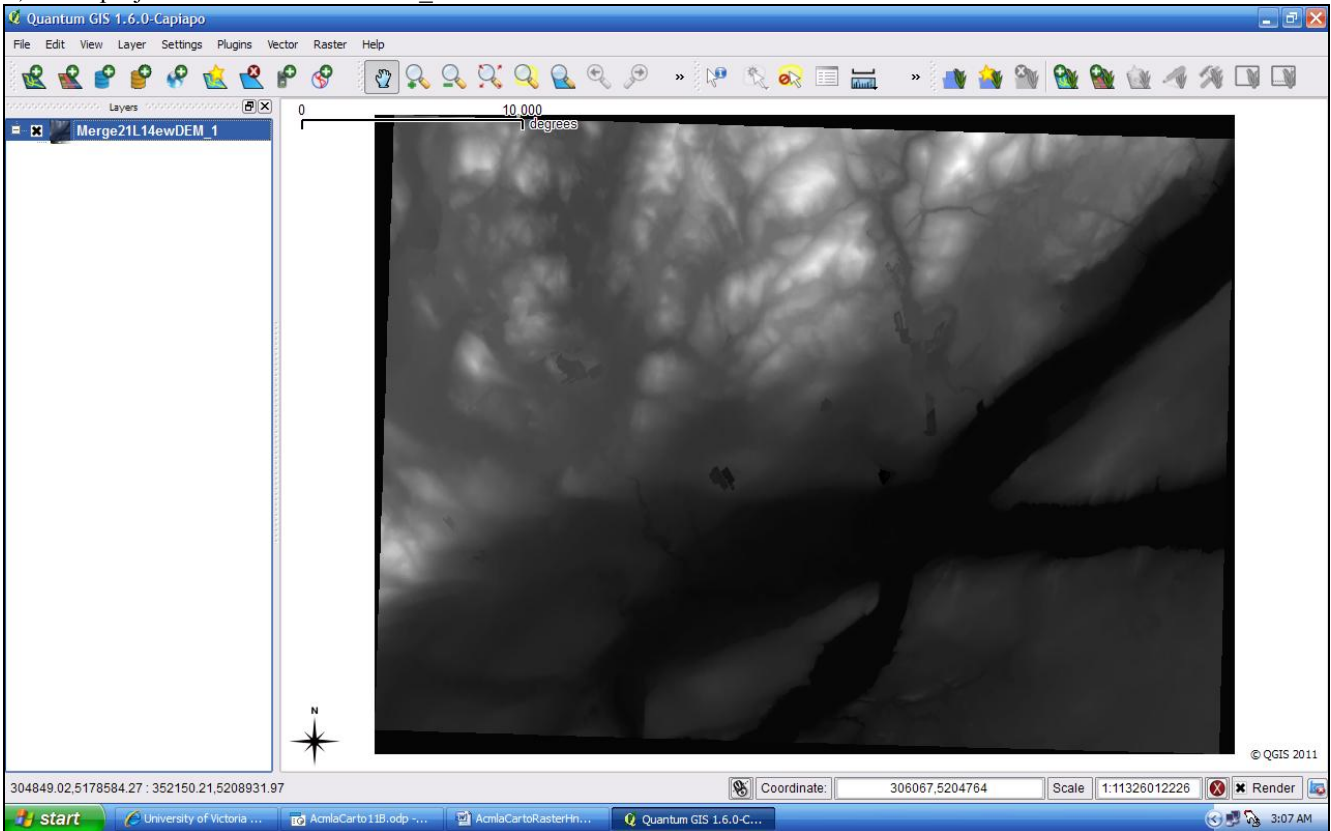**D**) right-click to remove unprojected file "Merge21L14ewDEM"…and…

(III. Assign Projection to raster file, con't)

E) …1. click on add raster &   2. select projected file "Merge21L14ewDEM_1" to view…

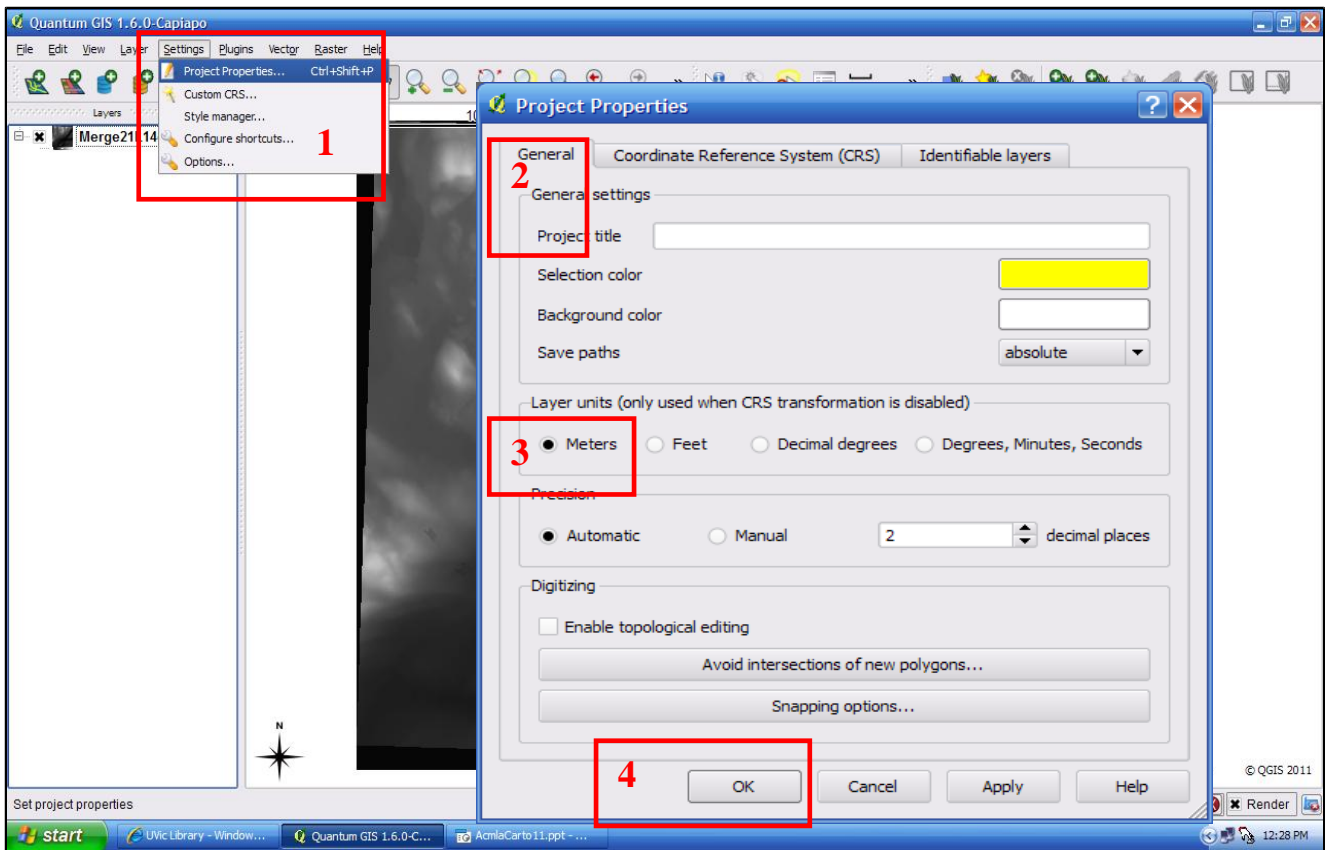**F)** …the projected file "21L14ewDEM_1"

-Note the Scale Bar units; we will set this to metres in a moment.
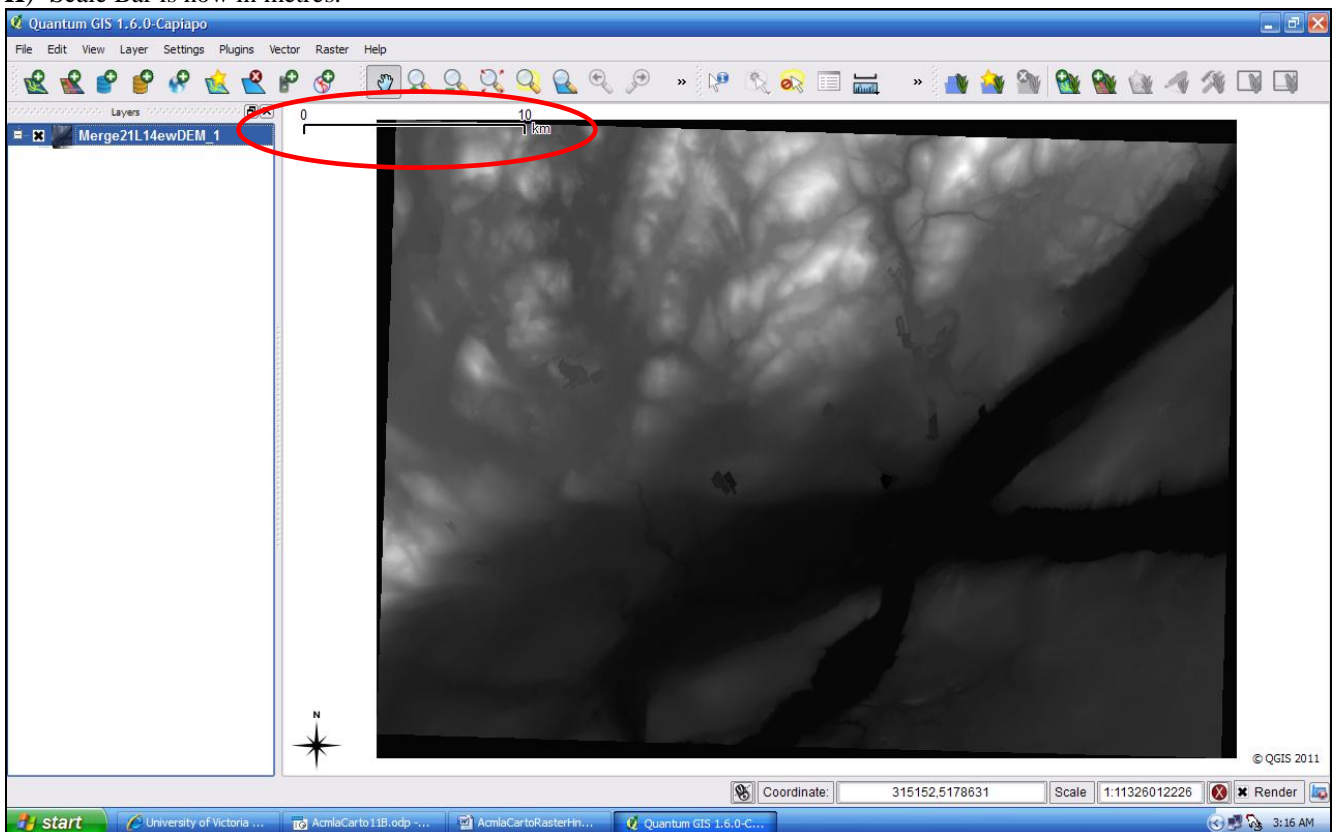-Also, note the "shadow"; we will get rid of it in a few slides.

(III. Assign Projection to raster file, con't)
    G)1. select Project Properties 2.Select General tab   3. select Metres

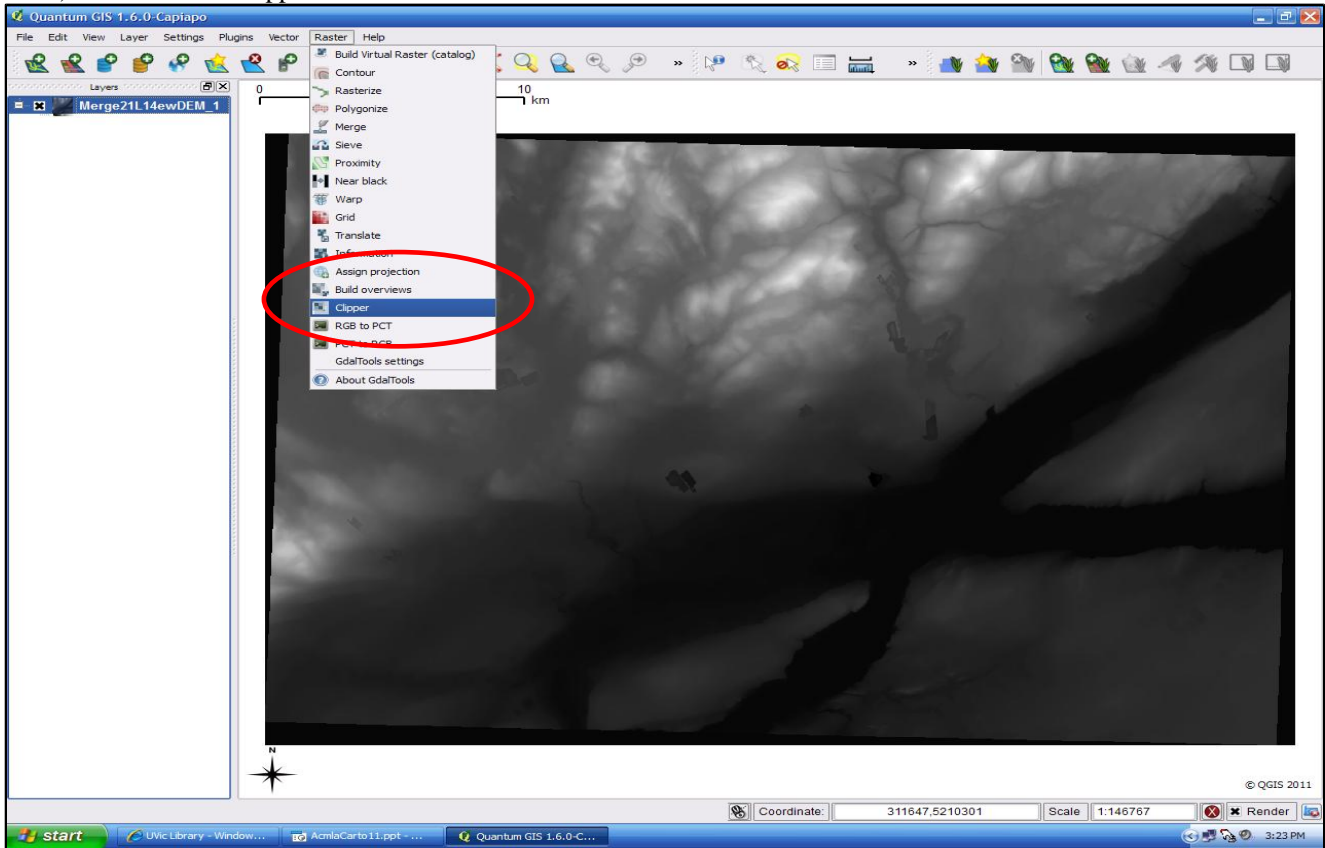(because file "Merge21L14ewDEM_1" is in metres NAD83 UTM zone 19N)
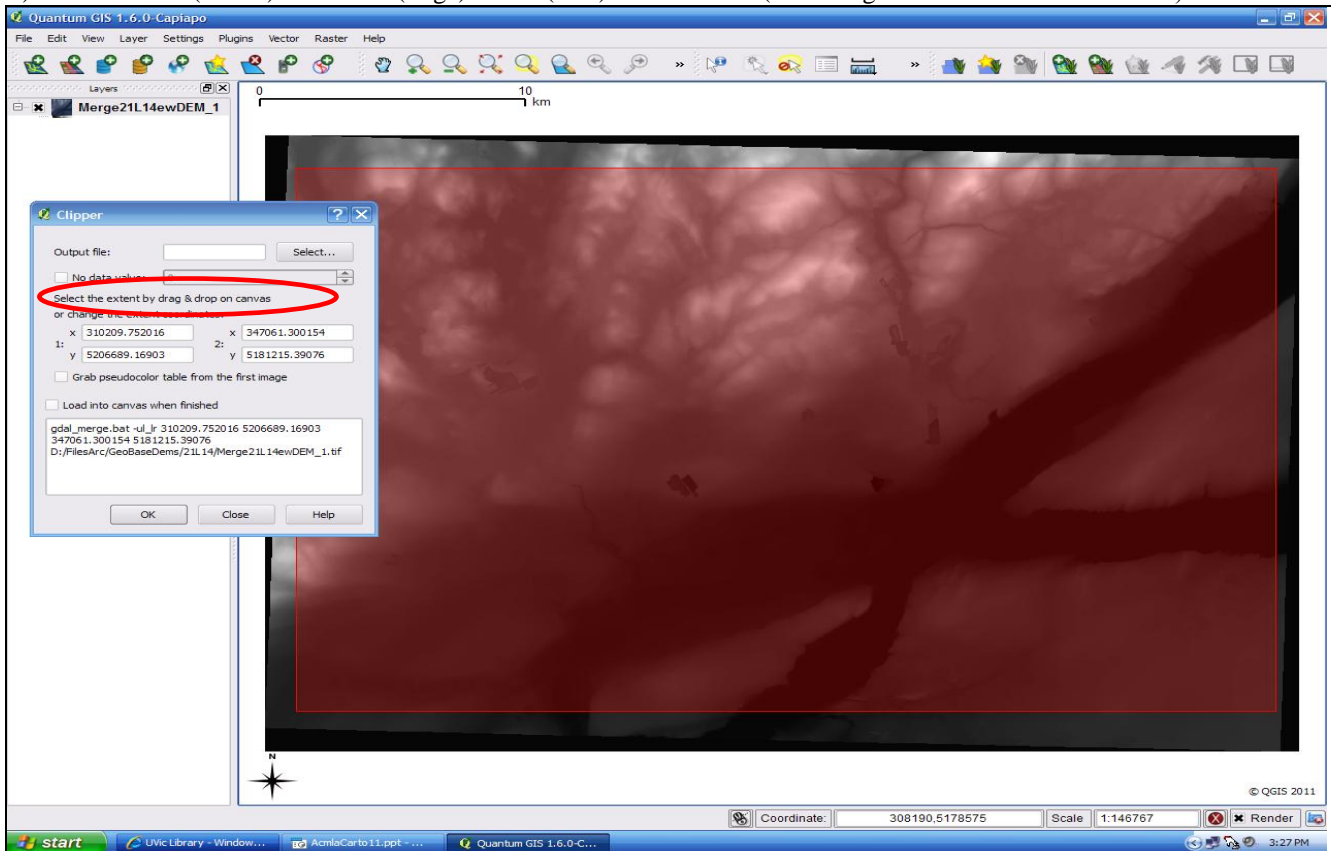

H) -Scale Bar is now in metres.

…Let's get rid of the "shadow"…

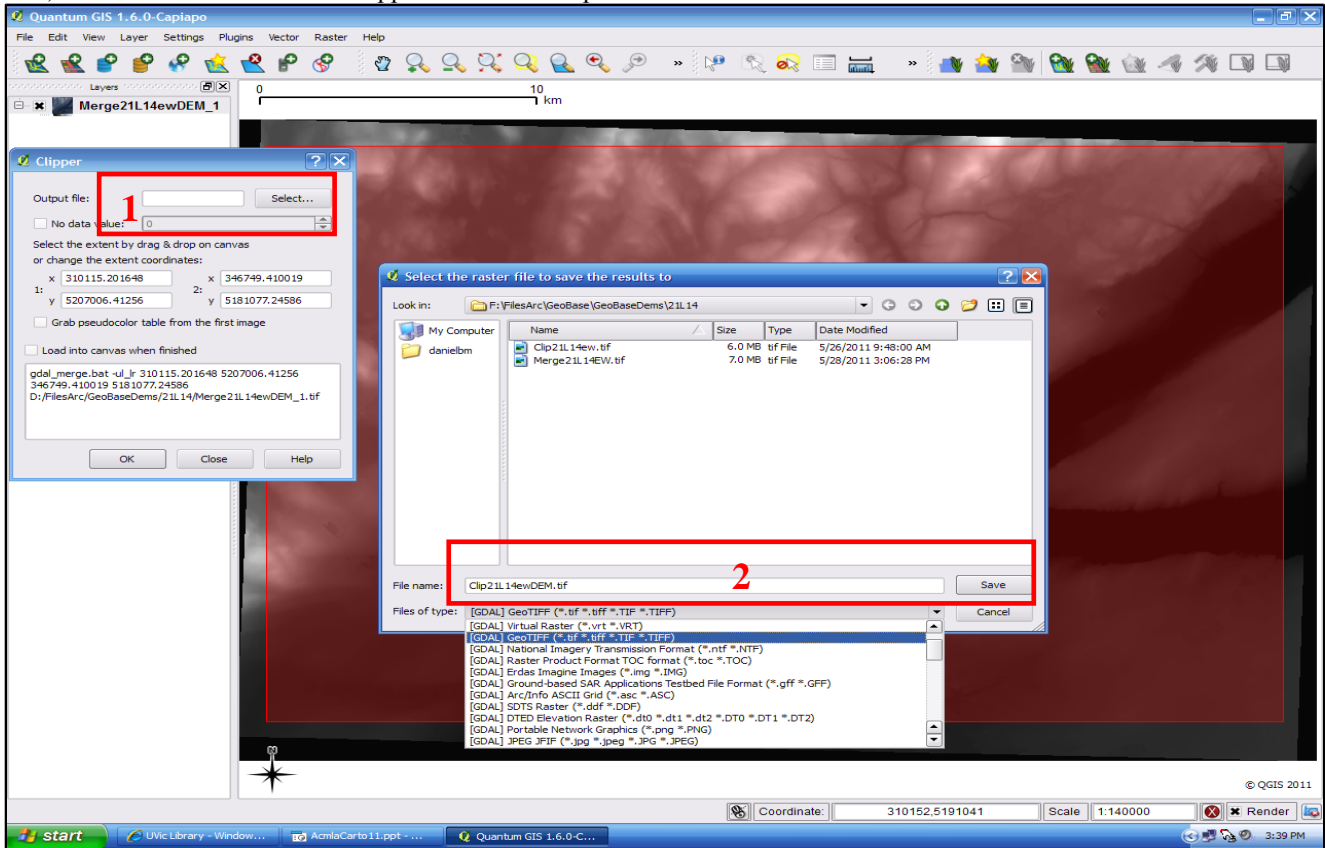## IV. Clipping a Raster
A) select Raster - Clipper

B) use cross-hair (cursor) to select a (large) extent (area) of the canvas (excluding the black "outside shadow")
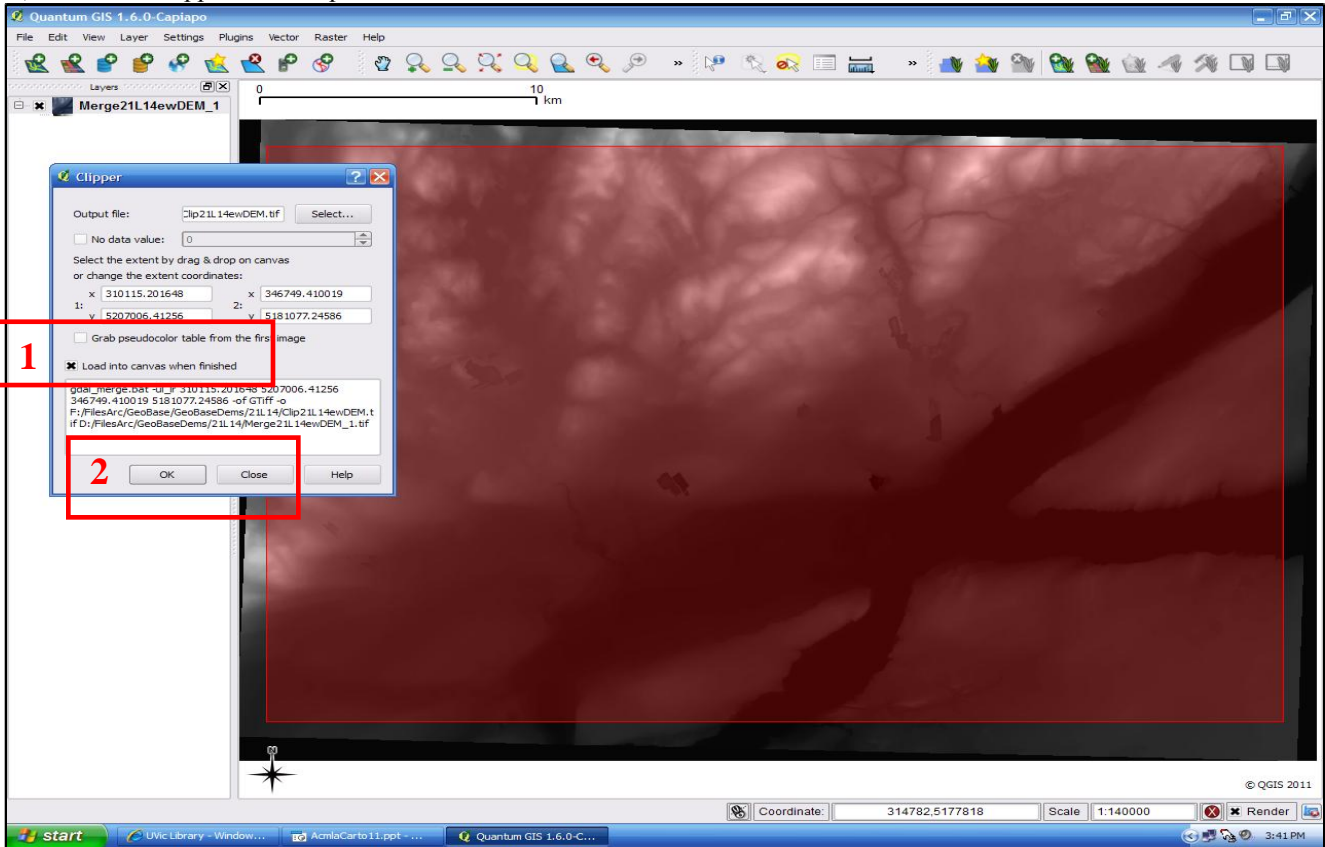

(-Grass-GIS can clip irregular shapes but we will not do it.)

(IV. Clipping a Raster, con't)
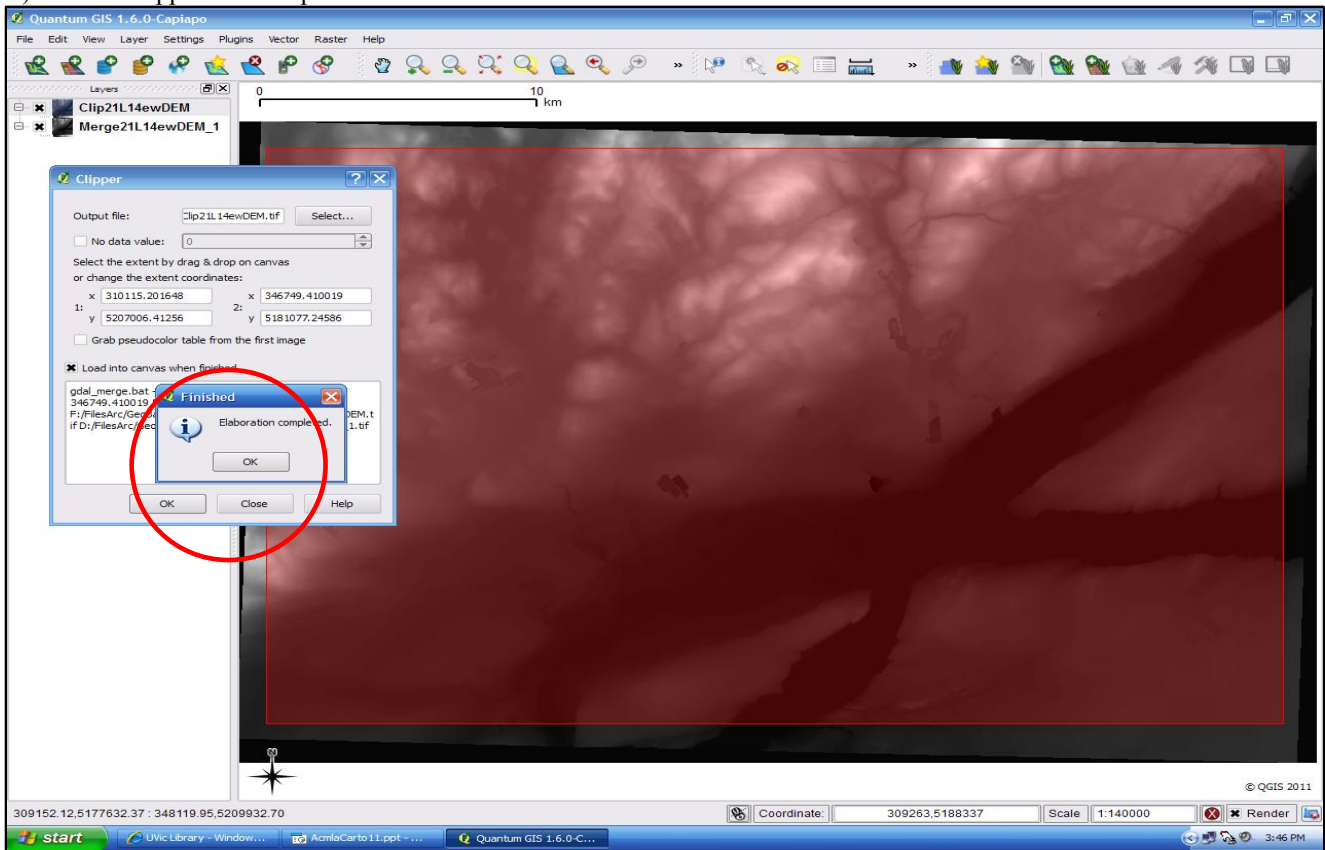   **C**) 1. click Select to name the clipped file….2. "Clip21L14ewDEM.tif"

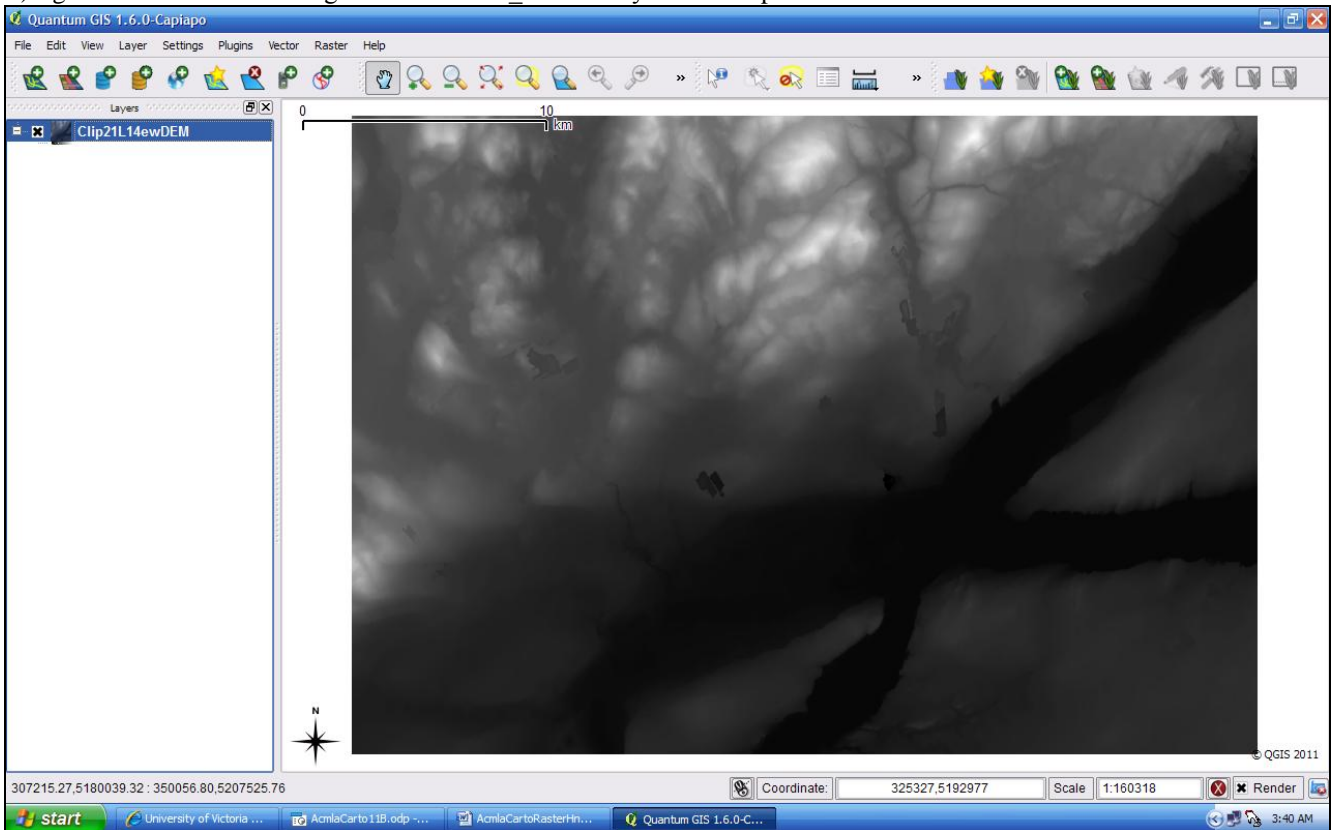**D**) 1. load the clipped file "Clip21L14ewDEM.tif"

(IV. Clipping a Raster, con't)

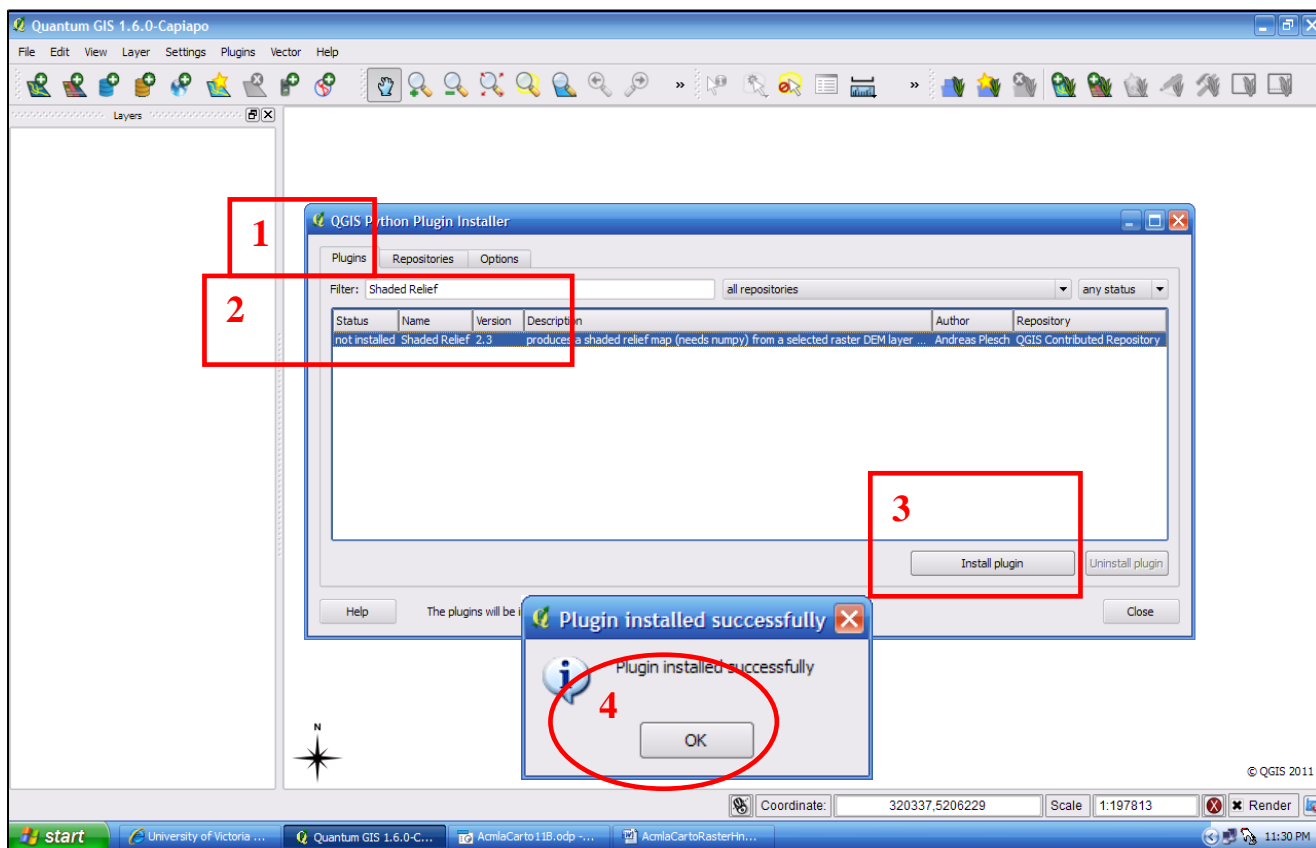**E**) load the clipped file "Clip21L14ewDEM.tif"

F) right-click to remove "Merge21L14ewDEM_1" from layers and Clip21L14ewDEM remains
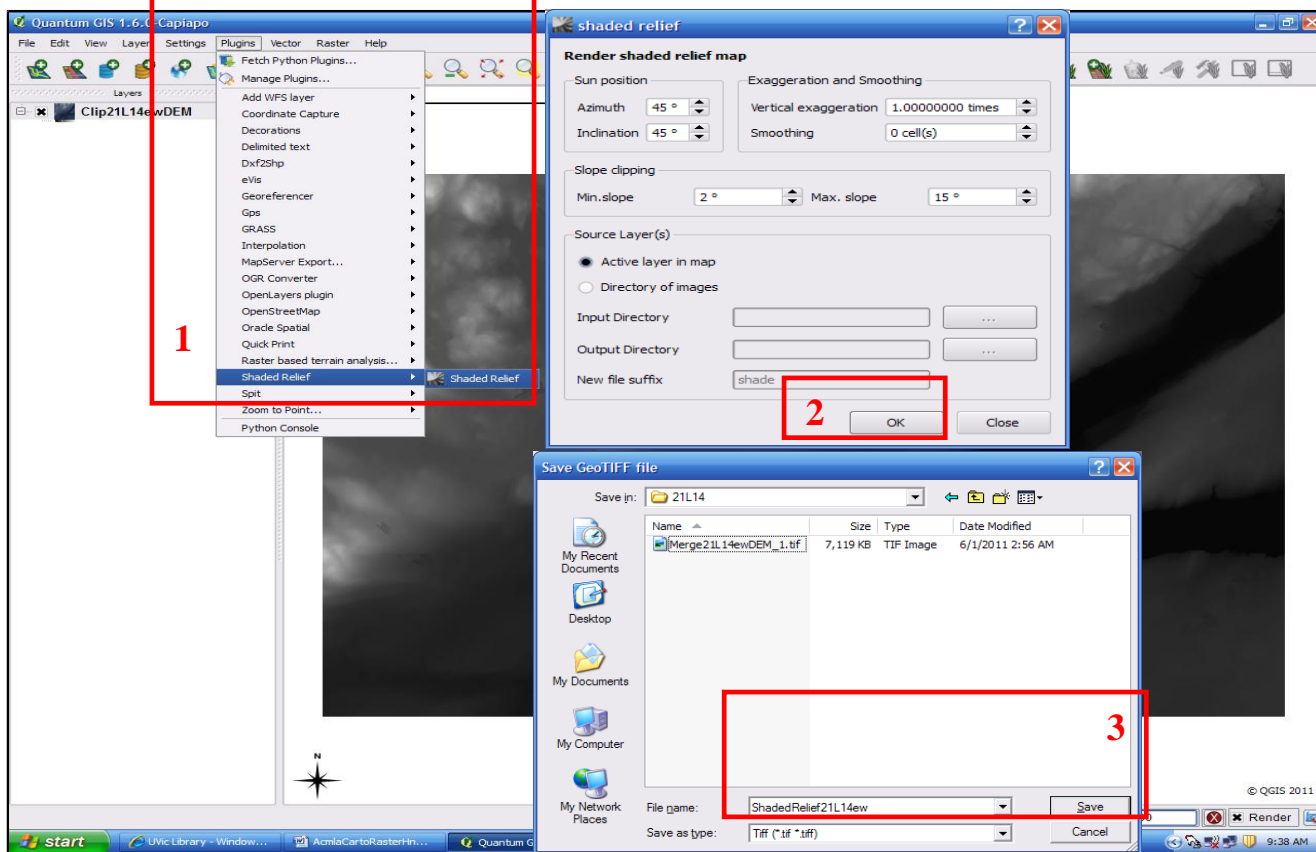
V. Shaded Relief (if time permits)
A) install Shaded Relief plug-in
    1. select Plugins tab 2. Type in "Shaded Relief" in Filter 3. install plug-in
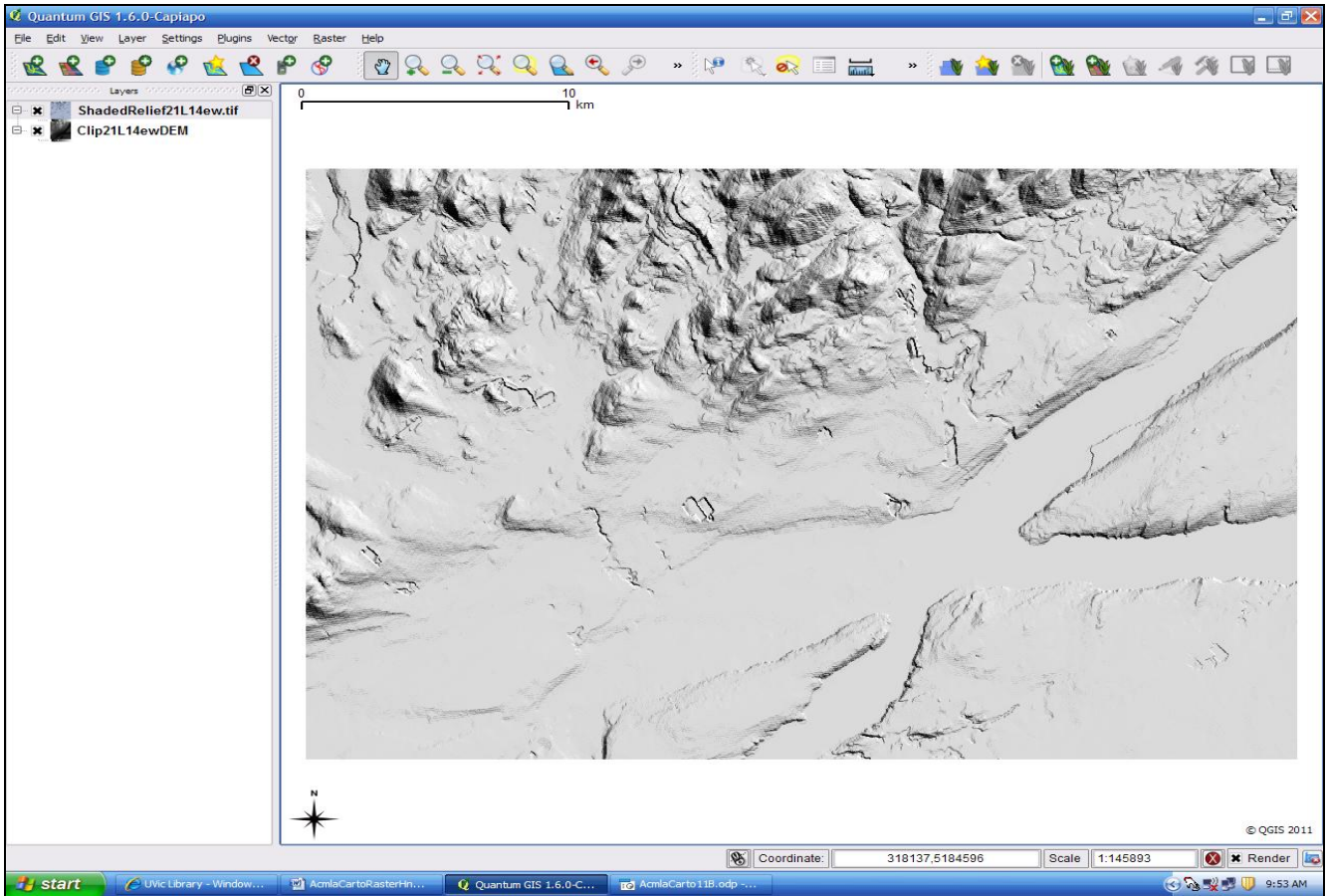
B) Shaded Relief
    1. Plug-ins - Shaded Relief (accept defaults)   2. OK   3. save the file "ShadedRelief21L14ew" to a directory folder
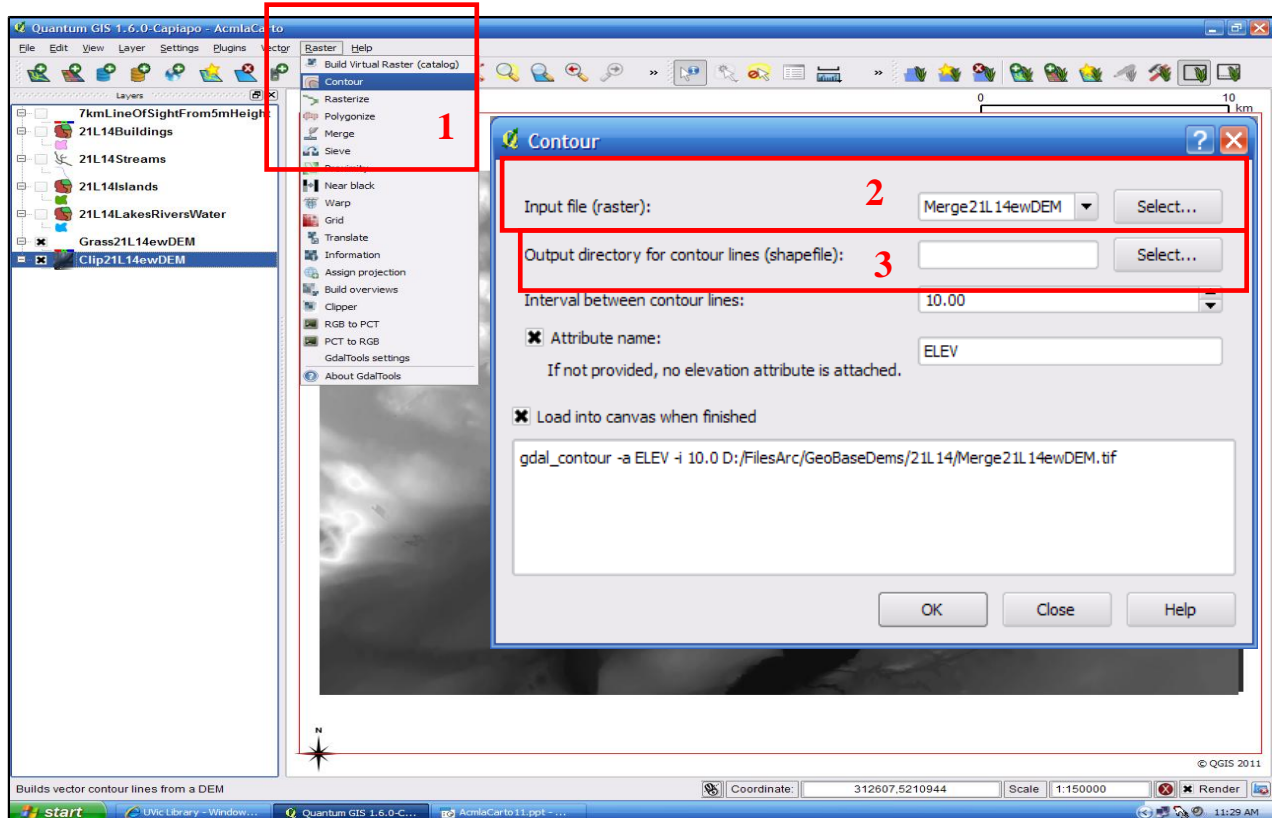

(at another time, could change default settings…)

V. Shaded Relief of "21L14ew"

VI. Contours from Raster: (if time permits)

A) 1. select Raster–Contours 2. Input raster "21L14ewDEM" 3. Create directory folder for shapefiles 4. decide Contour intervals
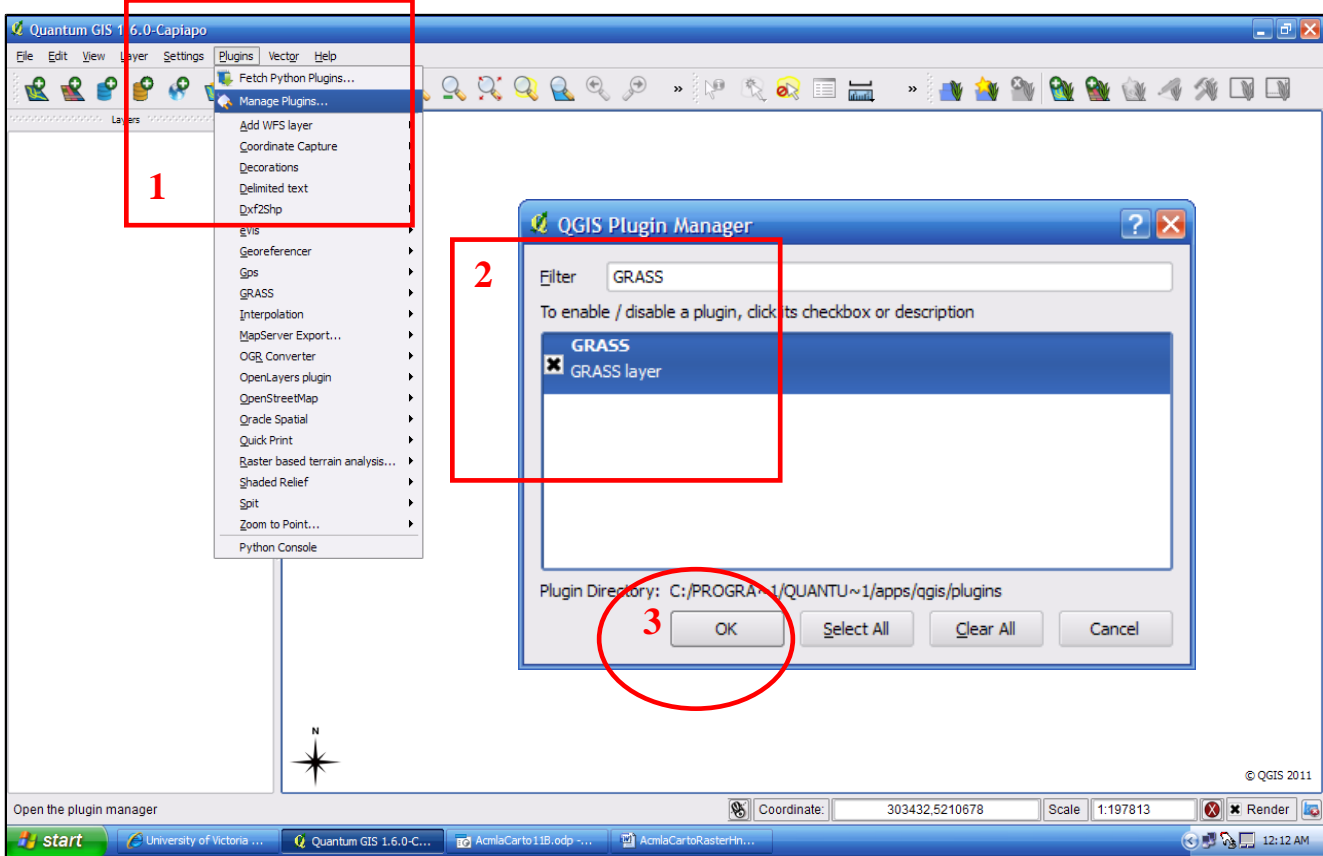

-Also decide whether to click Attribute name for the Attribute table to include contour intervals.

-#3>You MUST create directory folder for the (various components of shapefiles)

-No screen shot: what do think of your contour lines?

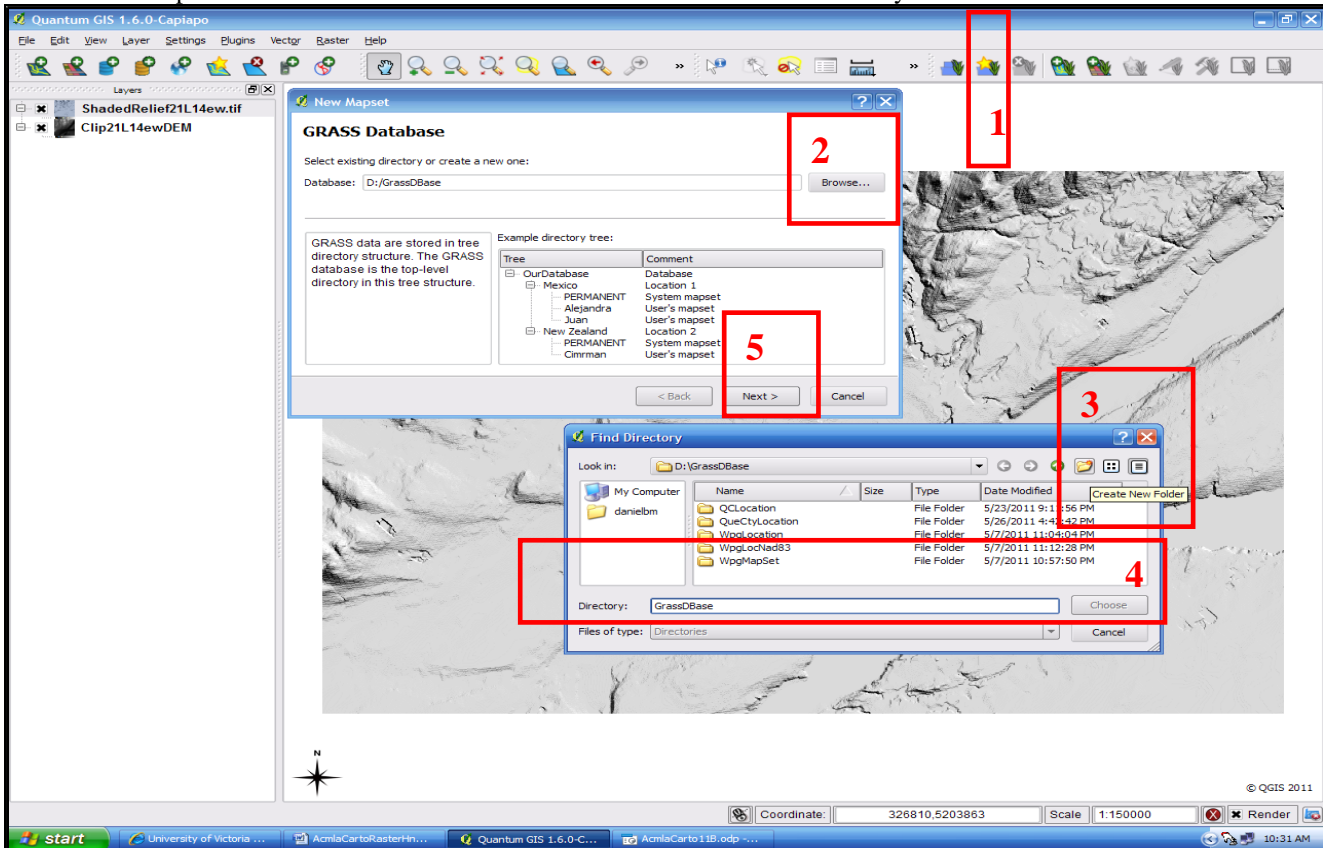**VII. GRASS functions via QGIS (take away homework?!)**
   A) 1. manage Plug-ins   2. Filter for GRASS & select

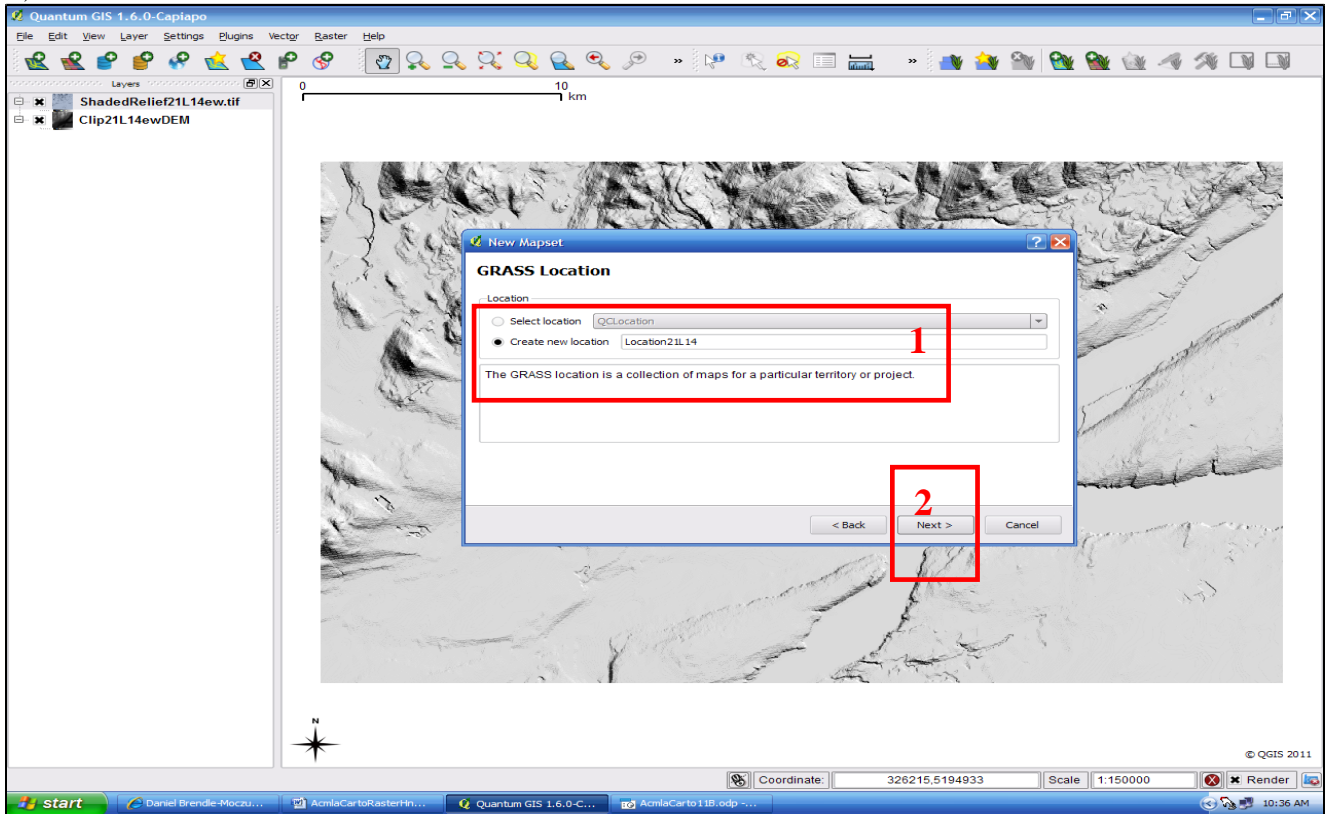
(GRASS layer may be already selected; click OK)

B) need GRASS (tree) directory
1. click new Mapset   2. Browse to where to create…3. new "GrassDBase" directory folder   4. Name it GrassDBase
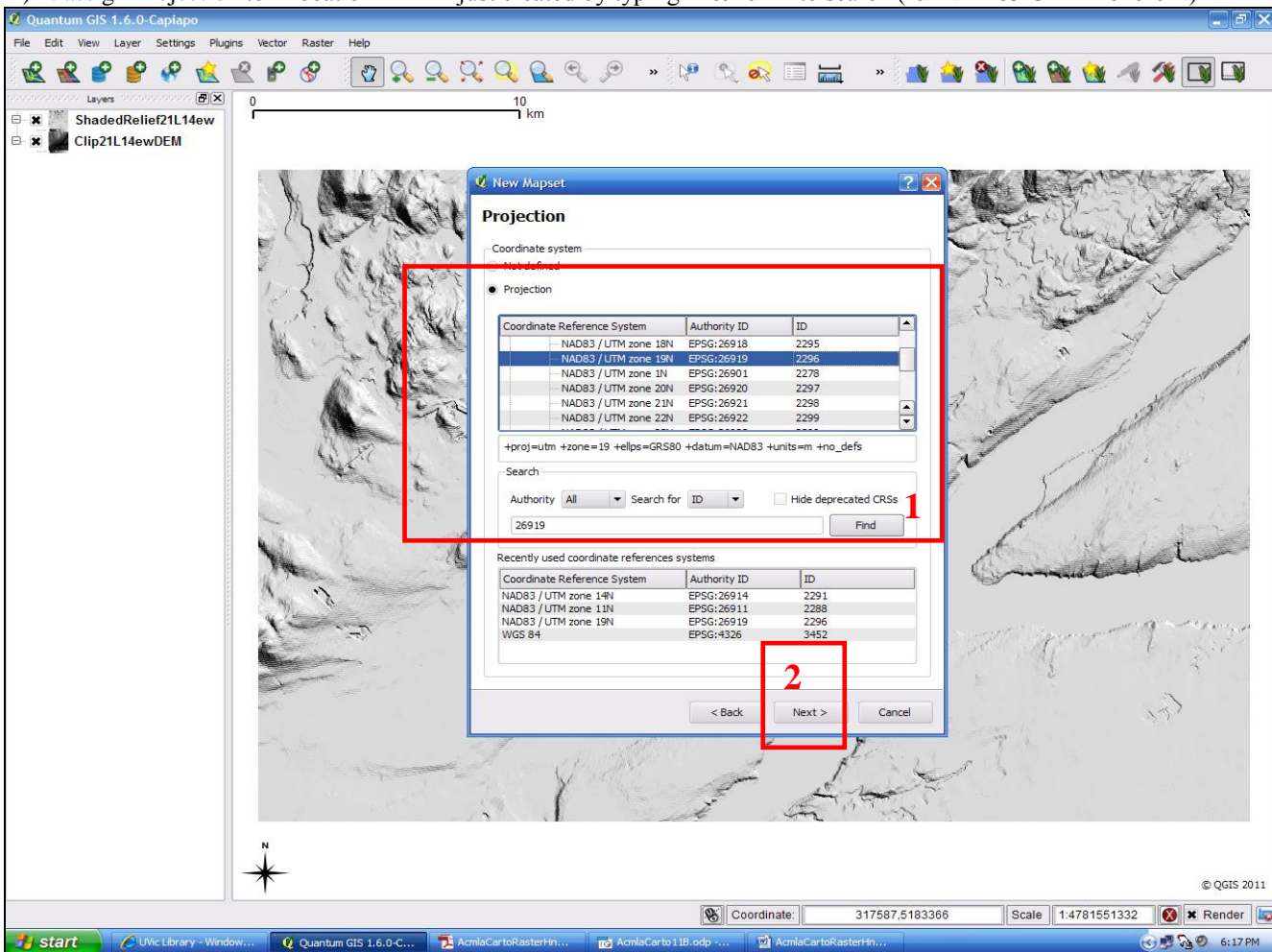

(-could name it anything else…)

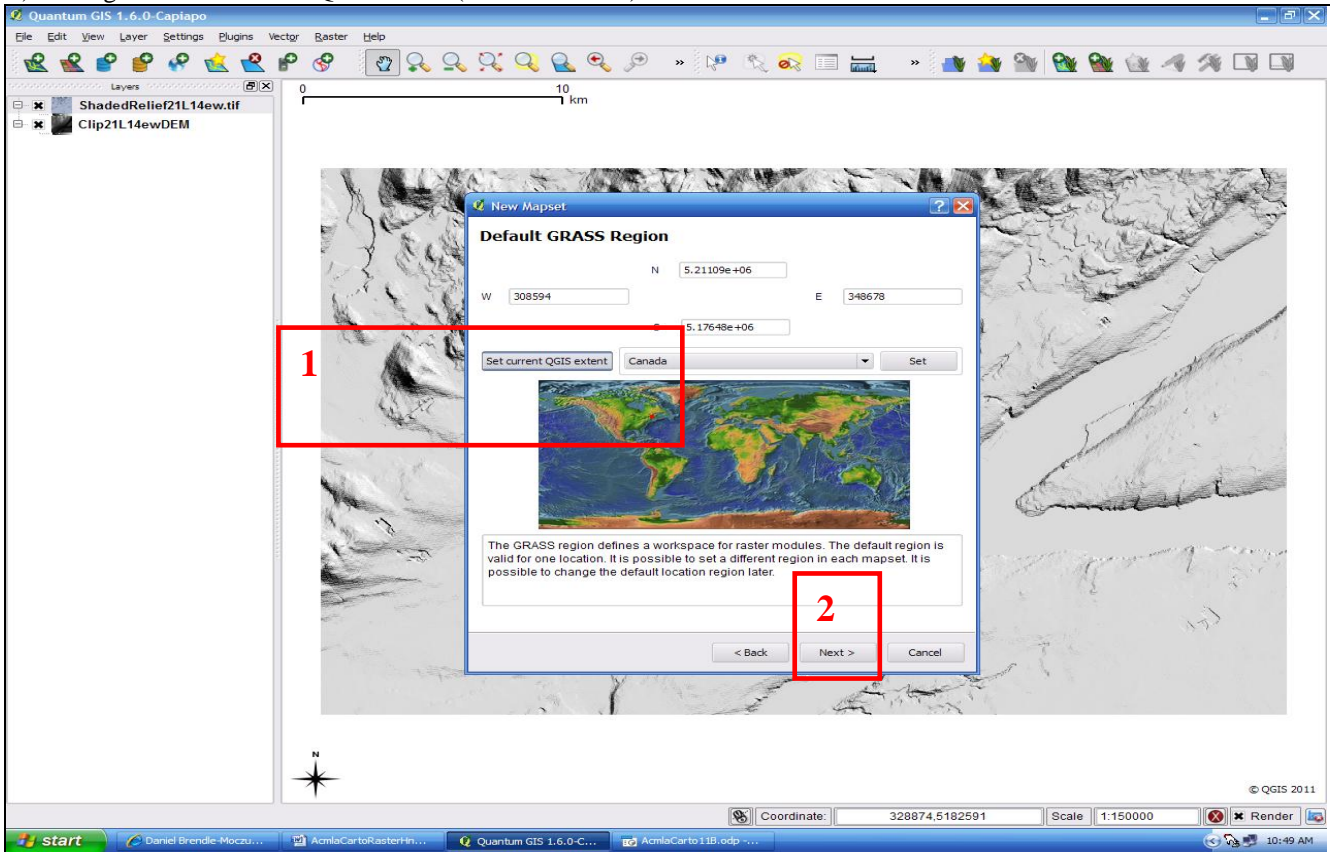**C**) 1. create new GRASS Location: "Location 21L14"

(VII. GRASS functions via QGIS: con't))

D) 1. assign Projection to "Location21L14" just created by typing "26919" into search (for NAD83 UTM Zone19N)
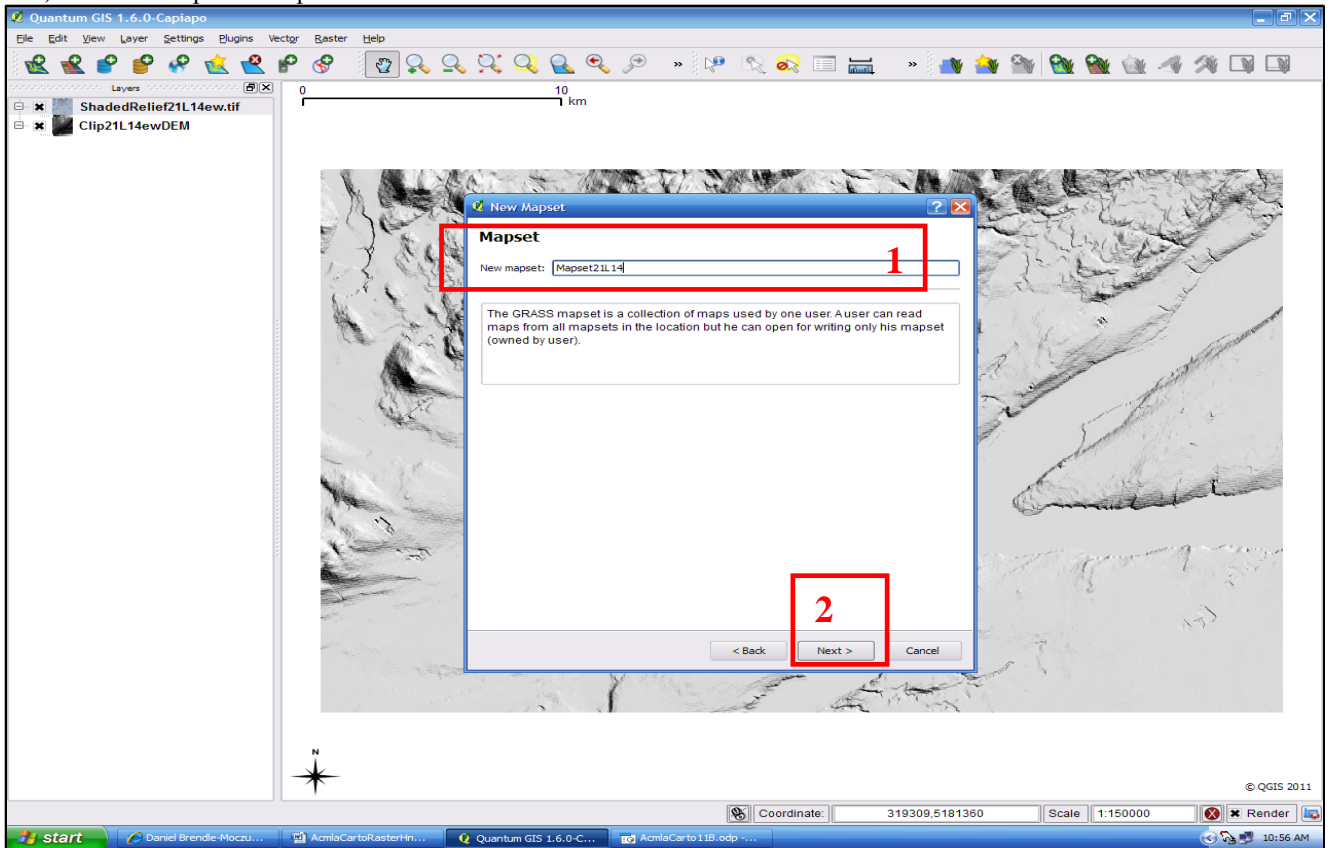
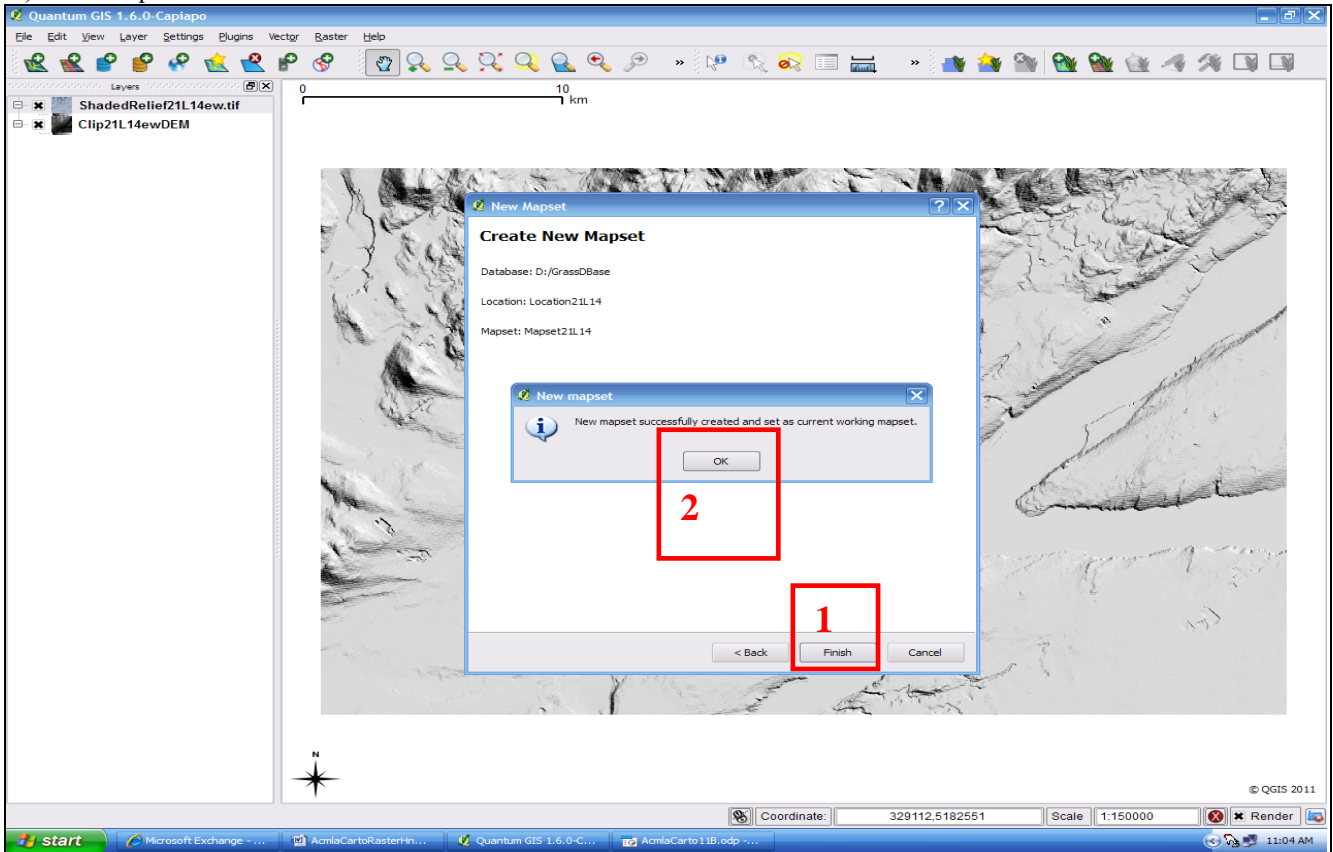**E)** set Region: 1. Set current QGIS extent (which is 21L14)

(could set Canada as the region as well)

(VII. GRASS functions via QGIS, con't))

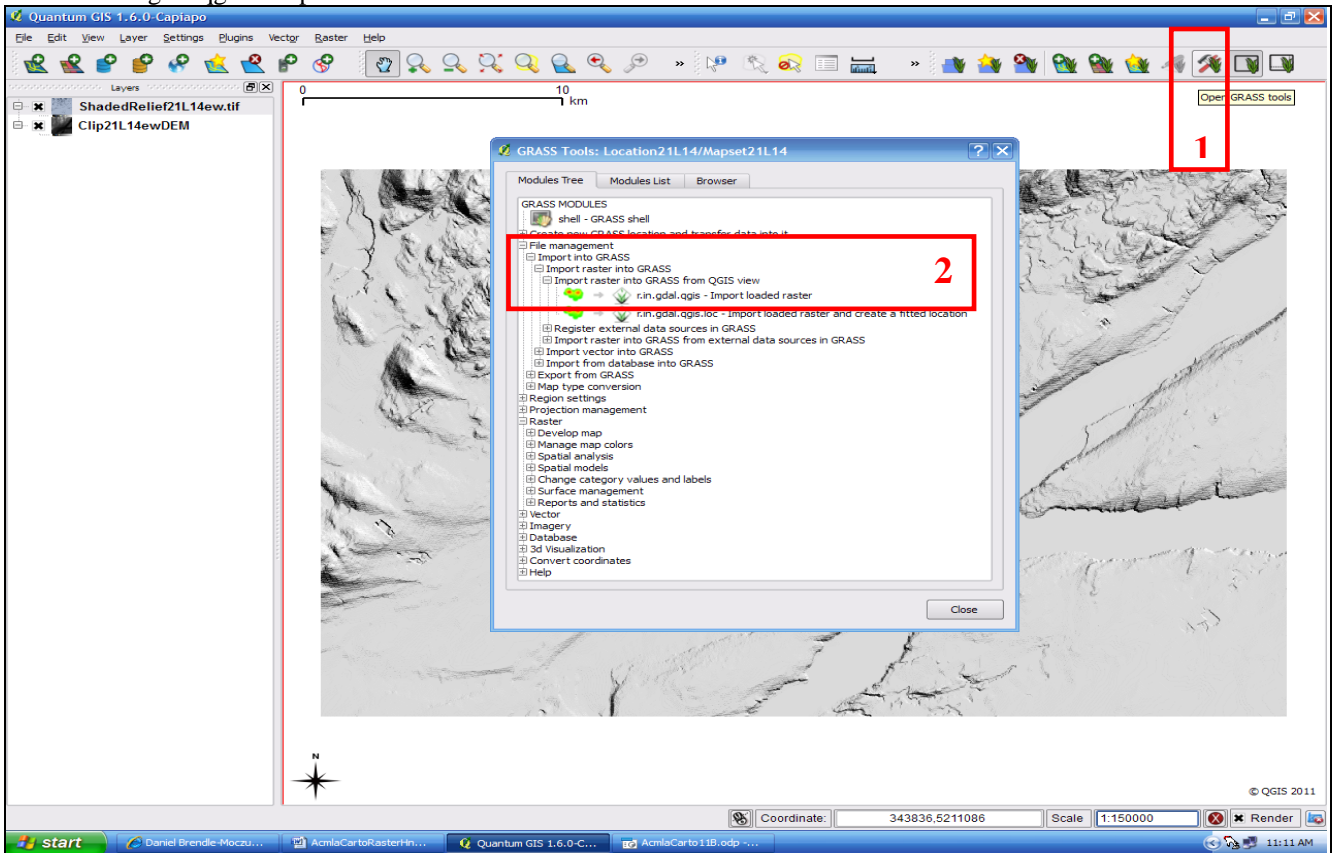   **F)** 1. create Mapset: "Mapset21L14"
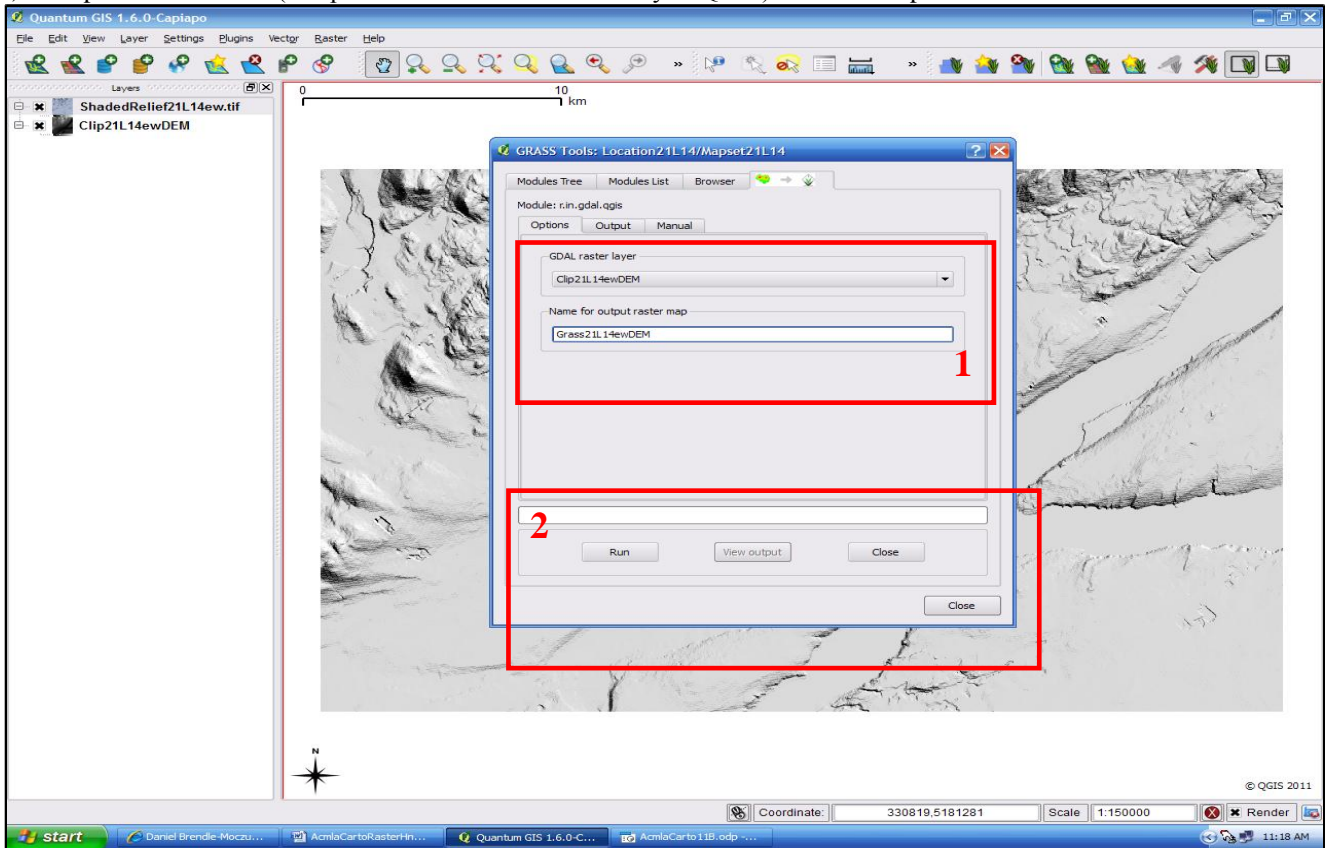
G) new "Mapset21L14" finished…and now…

(VII. GRASS functions via QGIS)

H) 1.click open GRASS tools   2. File management – Import into Grass – Import Raster into GRASS form QGIS-
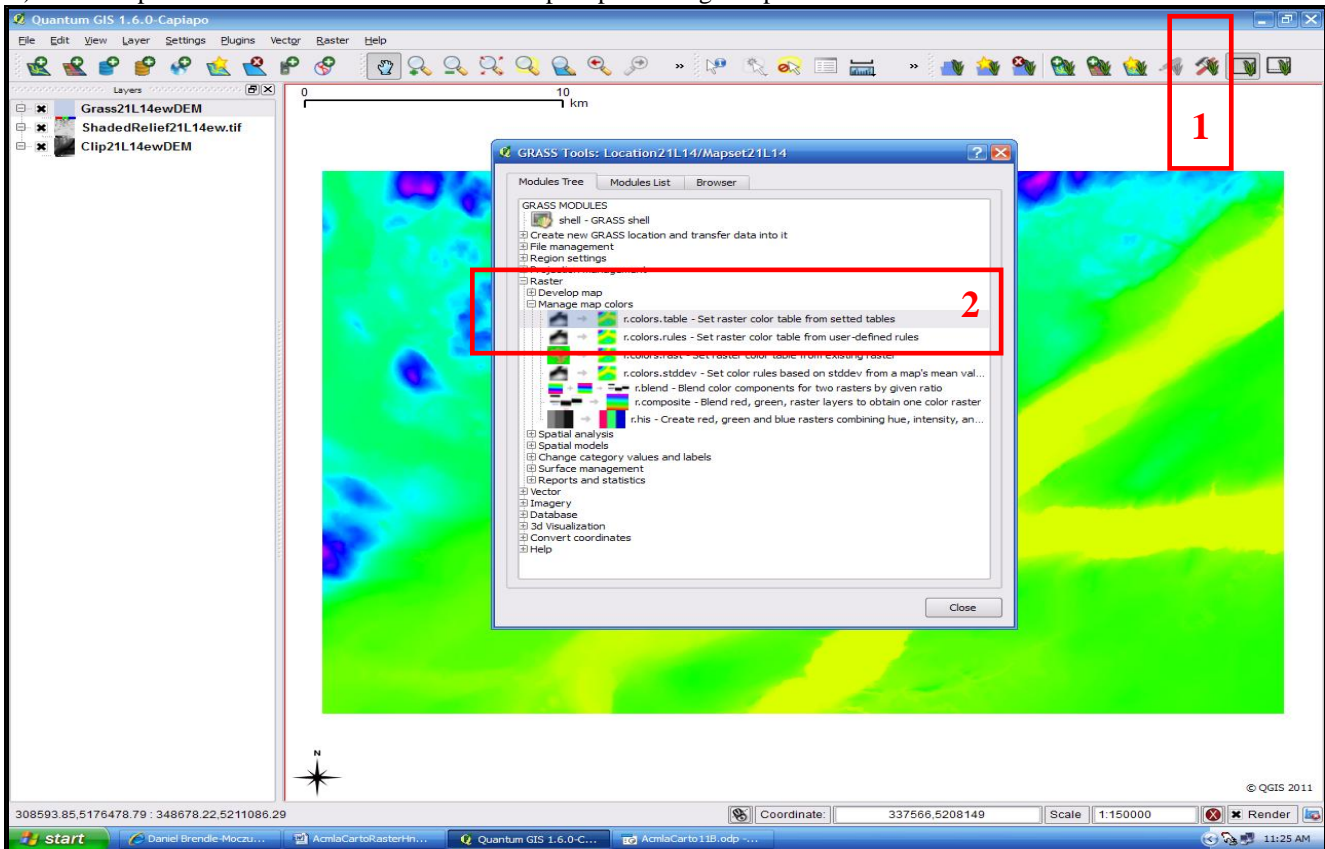-click on r.in.gdal.qgis – import loaded raster

i) 1. Import loaded raster ("Clip21L14ewDEM" raster already in QGIS) & create output name: "Grass21L14ewDEM"
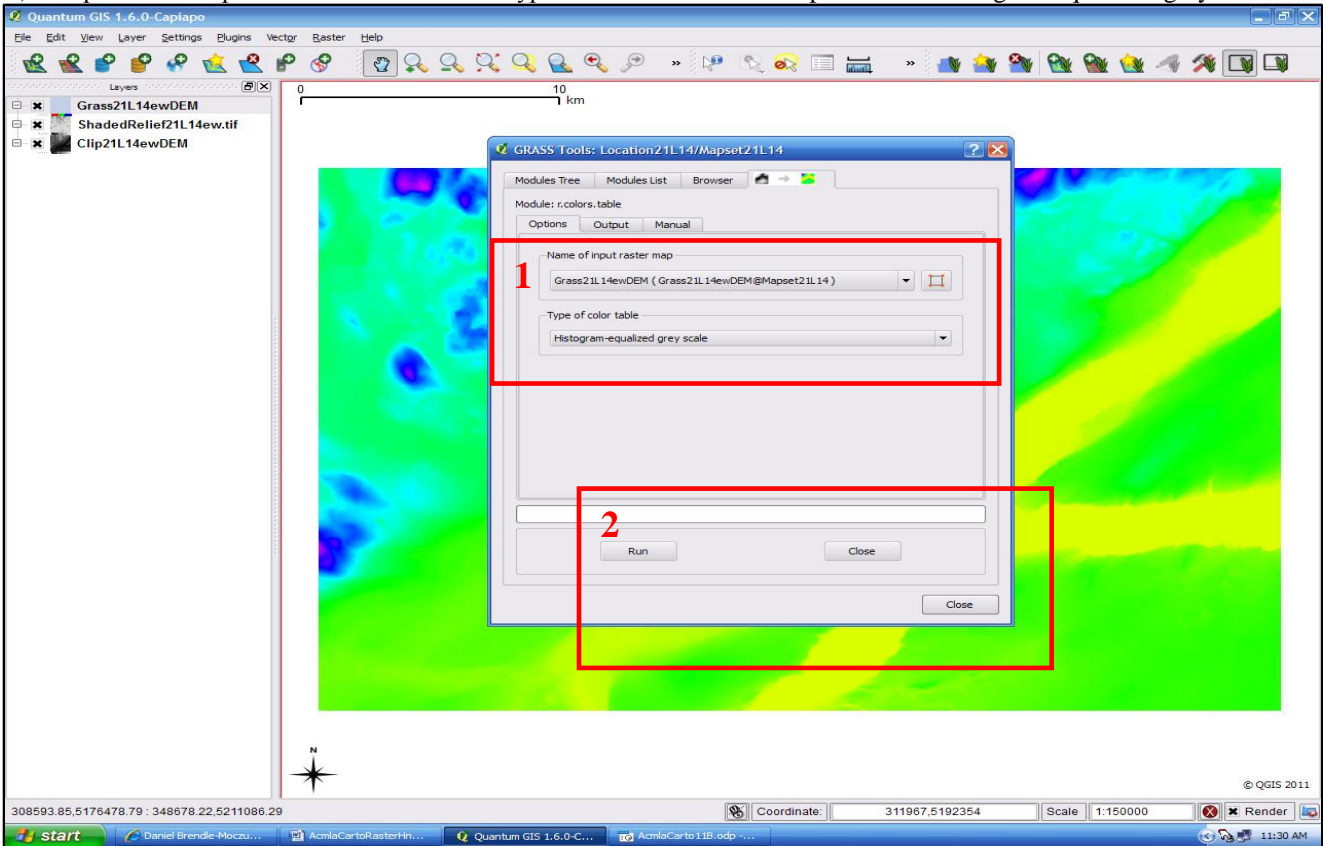

VIII. Manage map colours via GRASS
A) 1. click open GRASS tools   2. Raster – Develop map – Manage map colors - Set raster color from setted tables
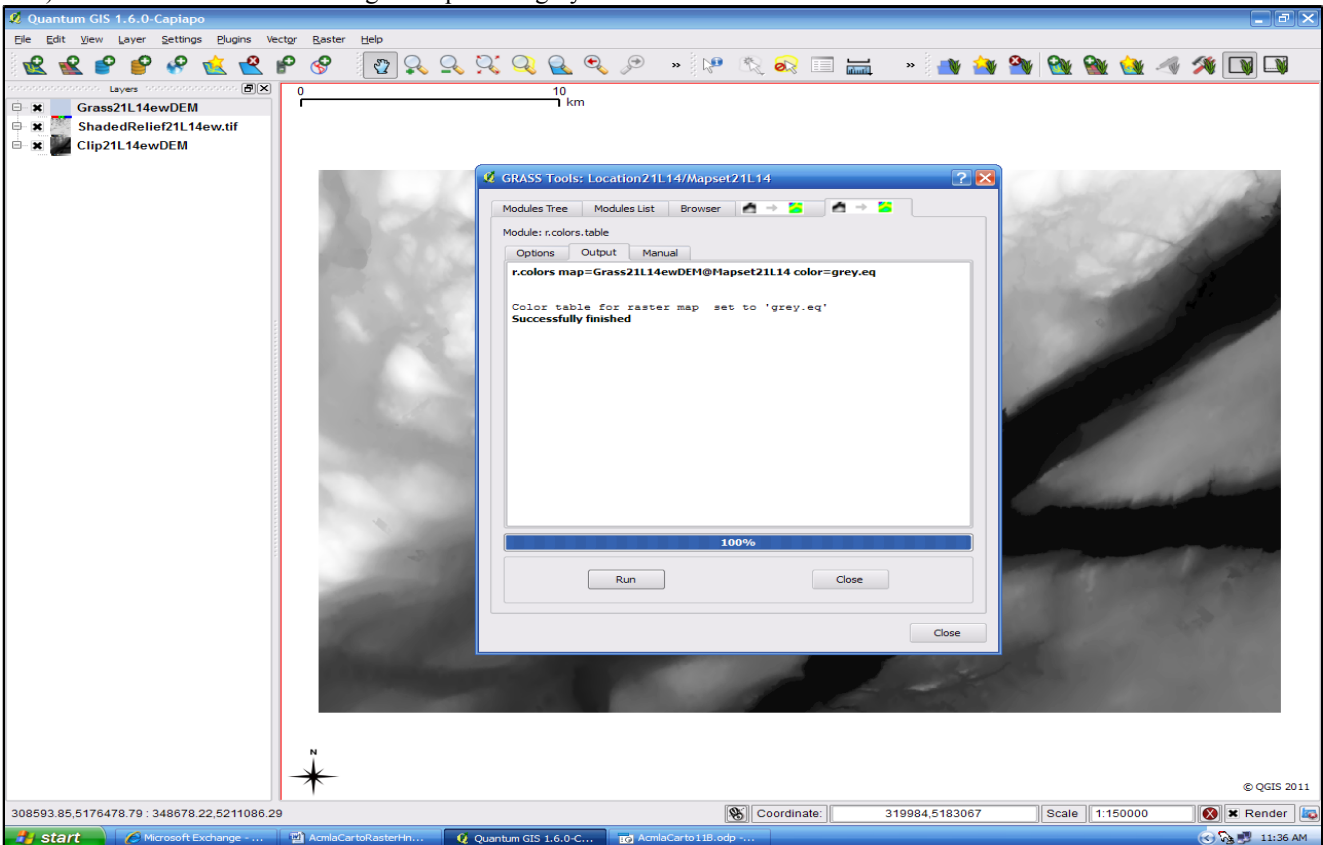
(VIII. Manage map colours via GRASS, con't)

B) 1. input raster map "Grass21L14ewDEM": Type of colour table: use drop-down for Histogram equalized grey scale

(-many other choices possible)

C) Grass21L14ewDEM": Histogram equalized grey scale

Many, many other Raster tools are available in GRASS including creating a ViewShed using "Line Of Sight".
(I have a handout if so desired)