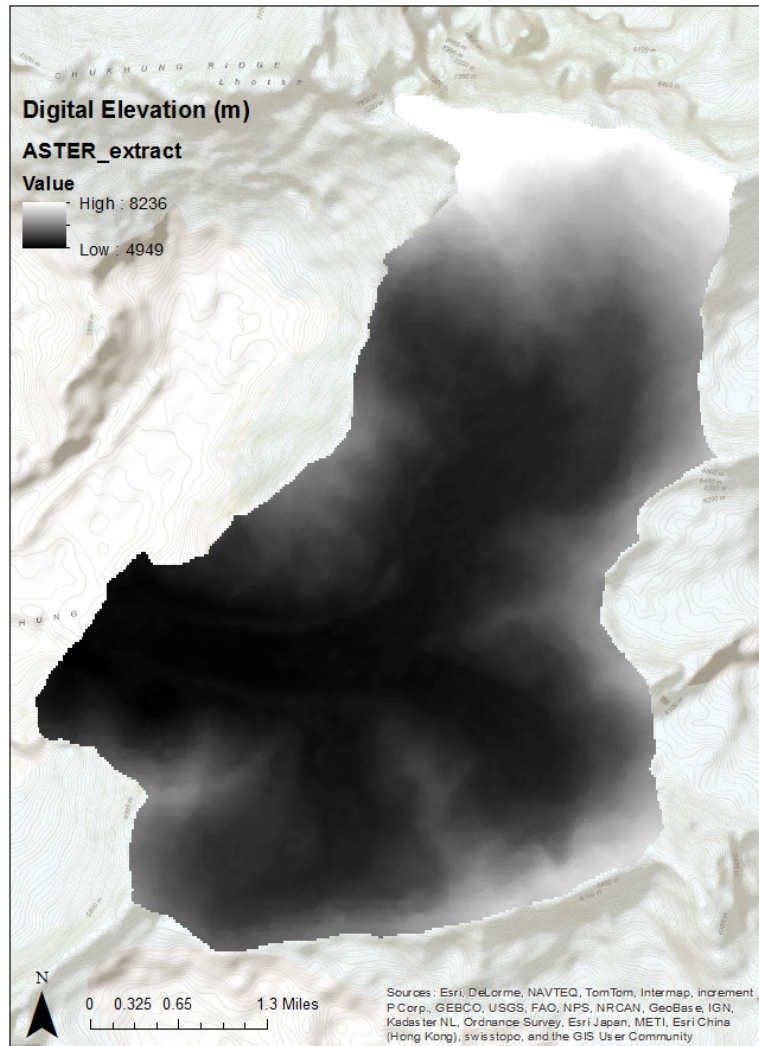
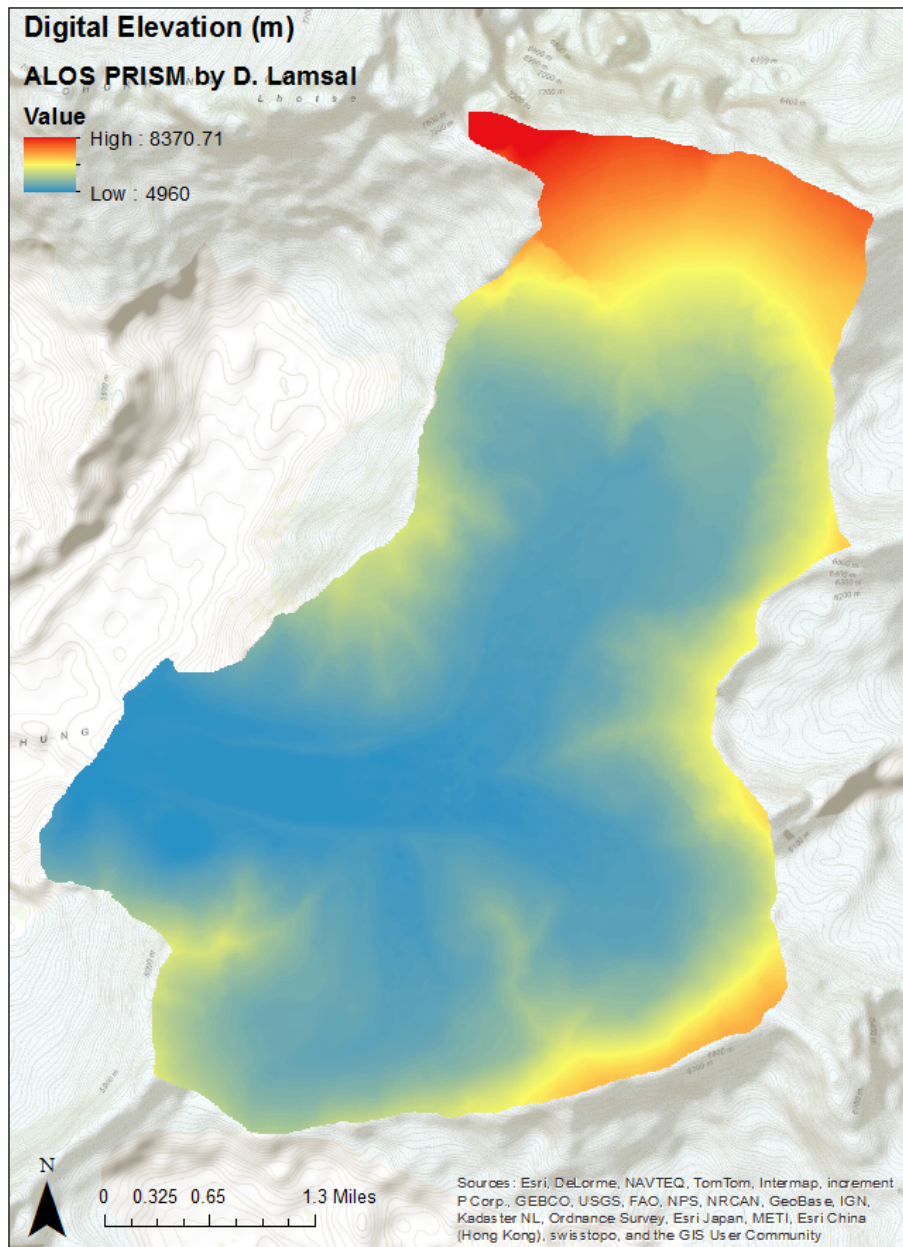


## GIS in Water Resources: Project Update

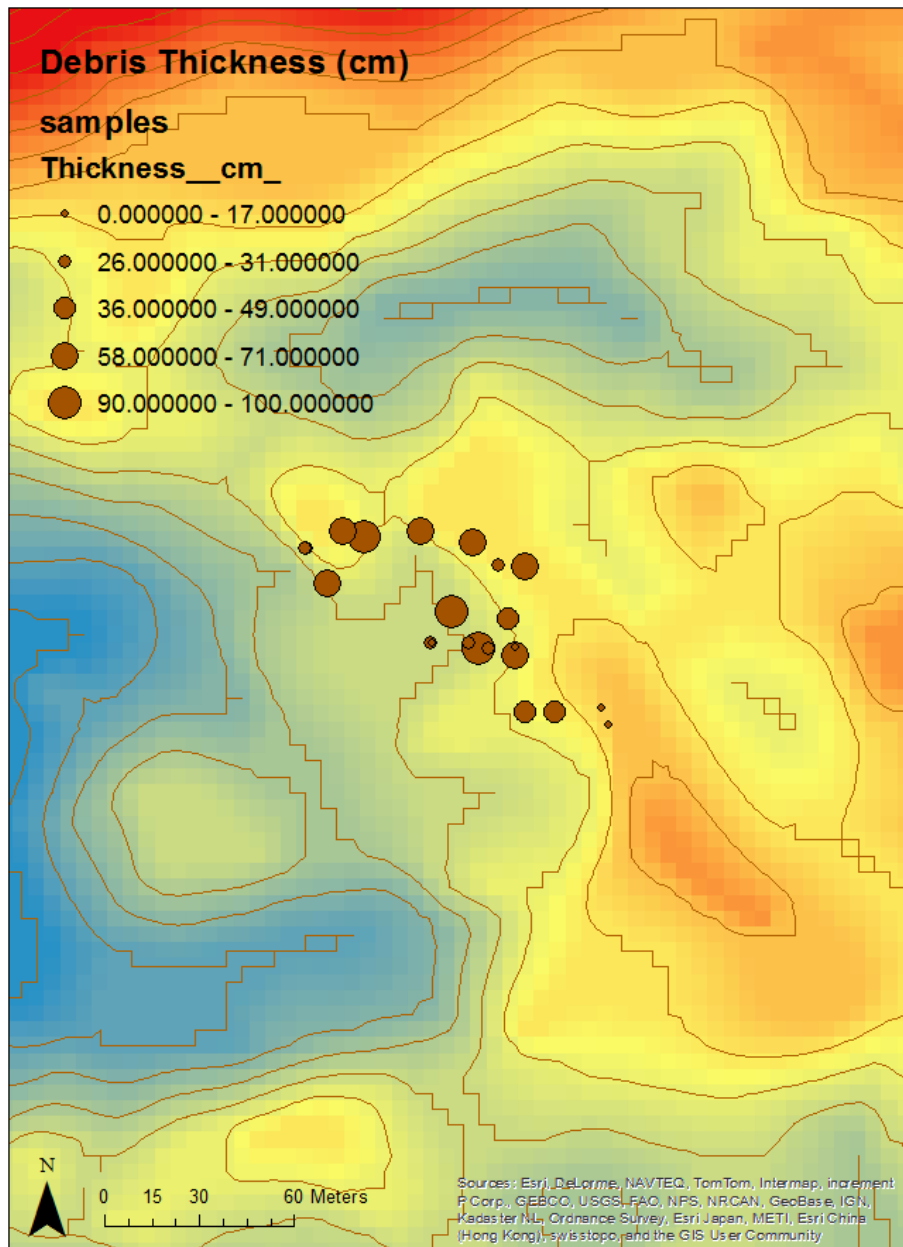
My project deals with mapping debris thickness over the Imja Lake glacier in Nepal. So far I have acquired two different DEM datasets for the area of interest and a limited number of field sampling data for debris thickness measured at various locations on the glacier. These data as well as a contour map of the glacier derived from the finer resolution DEM I have mapped below.



**Map of Digital Elevation over the Imja Lake Basin at 60m resolution**



**Map of Digital Elevation over the Imja Lake Basin at 5m resolution**



**Map showing debris thickness sampling locations and values on one part of the glacier**

Ernst, Clayton  
10/29/13

I plan to perform some statistics on these data to determine if a relationships can be drawn between debris thickness and any geospatial data such as elevation, slope, surface curvature, etc.

I also have GPS tracker data that follows David Rounce's movement over the surface of the glacier as he undertook his sampling. These might be useful in determining any anomalies in the DEM (which is several years old).

Beyond attempting to derive relationships around the debris thickness, I also plan to investigate remotely sensed albedo data for the area and similarly attempt to derive relationships with local terrain conditions.

In the end, if a valid statistical method can be found to extrapolate across the whole glacier, I might be able to derive a fine-scale debris thickness map, but this is yet to be determined.