

Procedure for automated GLIMS ID assignment in ArcGIS, using the coordinates of a point file

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Note: In order to conform to the GLIMS database guidelines make sure the projection of all open shapefiles (Glacier polygons and Point ID files) is with WGS_1984 datum, and location units are set to decimal degrees.

- 1) Create a *Point file* with GLIMS ID locations, either manually or automated from glacier label polygon centroid locations (see <http://www.glims.org/MapsAndDocs/guides.html> “GLIMS Analysis Tutorial”). If you already have line files for late-summer snowlines and glacier centrelines you can choose their intersect as the point ID locations. The final point file contains one point in each glacier polygon.
 - 2) Create two new fields in the point file attribute table (e.g. LAT and LONG) with data types *float* or *double* with 3 decimal places. Use the *Calculate Geometry* dialog box in these fields (right click on the field header to open this dialog box) to calculate *y-location* and *x-location* in decimal degrees from the *latitude* (LAT) and *longitude* (LONG) respectively.
 - 3) Create two new fields in the point file attribute table (e.g. *GLIMS_E* and *GLIMS_N*) with data type *long integer*.
 - 4) Calculate *GLIMS_E* in the field calculator as: $GLIMS_E = (360 - Abs([Long])) * 1000$
 - 5) Calculate *GLIMS_N* in the field calculator as: $GLIMS_N = [Lat] * 1000$
 - 6) Create a new field in the point file attribute table (e.g. *GLIMSID*) with data type *text*.
 - 7) Calculate *GLIMSID* in field calculator as:
 $GLIMSID = "G" \& [GLIMS_E] \& "E" \& [GLIMS_N] \& "N"$
- This will return a GLIMS GlacierID of the form *GxxxxxxEyyyyyN*, with ‘x’ and ‘y’ being numbers. *Note:* for glaciers in the southern hemisphere change “N” to “S”, and correct for negative in the [Lat] field calculator (See step 5).
- 8) Spatially join the *Point file* and *Glacier Polygon file* and retain the fields LAT, LONG and GLIMSID in the Glacier Polygon file.

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