

# How to Submit Data to GLIMS

Bruce Raup

Version 0.5

2018-08-07

## What is this?

This document summarizes steps needed to submit glacier data to the GLIMS (Global Land Ice Measurements from Space) database. See <http://www.glims.org/>. This document supersedes the information in the GLIMS Data Transfer Specification [1], though the file formats described in [1] are still relevant.

## A Typical Data Submission

When someone submits glacier outlines to GLIMS, we need:

1. **Glacier outlines** (as closed polygons) in shapefile format. Geographic coordinate system (in lon/lat) and WGS84 datum is preferred. Rock outcrops internal to the glacier (nunataks) should be represented as “holes” in the polygons.
  - a. attributes SHOULD include:
    - i. “local” uncertainty in x and y (precision of vertex digitization)
    - ii. “global” uncertainty in x and y (geolocation accuracy of the polygons)
  - b. attributes CAN include
    - i. glacier name
    - ii. WGMS glacier classifications
    - iii. glacier length
    - iv. WGMS glacier IDs
    - v. image IDs specific to each glacier (see [1] for attribute names)
2. **Additional feature types:** optional features can be mapped and submitted. In these cases, a analyst-supplied glacier ID should be used to tie these features together with the glacier outlines. In the following, “line type” refers to the attribute in the shapefile labelled “line\_type”.
  - a. Debris cover (polygons: line type “debris\_cov”)
  - b. Supraglacial lakes and proglacial lakes (polygons: line type “supra\_lake” or “pro\_lake”)
  - c. Center lines of glaciers (poly-lines: line type “centerline”)
  - d. Transient snow lines (poly-lines: line type “snow\_line”)
3. **Image ID/ scene (granule (image)) IDs** from the image provider; acquisition dates, instrument and platform name
4. Topographic map information if used instead of imagery: map projection; publication date; identification number if known; publisher
5. **Information on analysts and processing methods:** names of the analysts; approximate date of the analysis; as much detail as possible on method(s) used; percent manual editing; description of any collaboration with other GLIMS institutions (Regional Centers)

What is NOT needed:

1. GLIMS glacier IDs (we assign these at ingest time)

2. glacier areas (we calculate these at ingest time)

## Extra Credit

Other glacier data we like to receive includes:

1. glacier hypsometry (area distribution with elevation). Please use the RGI hypsometry format.
2. glacier velocity vectors

## More Information

For guidance on how to derive glacier outlines from imagery, see [2]. For general information about GLIMS, see <http://www.glims.org> or write NSIDC User Services at [nsidc@nsidc.org](mailto:nsidc@nsidc.org).

## References:

[1] GLIMS Data Transfer Specification

([http://www.glims.org/MapsAndDocs/datatransfer/data\\_transfer\\_specification.html](http://www.glims.org/MapsAndDocs/datatransfer/data_transfer_specification.html))

[2] GLIMS Analysis Tutorial

([http://www.glims.org/MapsAndDocs/assets/GLIMS\\_Analysis\\_Tutorial\\_a4.pdf](http://www.glims.org/MapsAndDocs/assets/GLIMS_Analysis_Tutorial_a4.pdf))