

## Remarks for the use of the Austrian glacier inventories

- the data projection is Gauss-Krueger M28, Bessel-Ellipsoid
- the data for 1969 is based on aerial photographs from 1969
- minor mountain groups of the 1969 inventory could not be digitized due to non-existing maps (see Tab. 1); in total ~4% of the total glacier area. The glacier area of these groups, however, is known from the original, manual interpretation. These values are added to the respective glaciers in the attribute table of the new inventory (1997 - 2002).
- the inventory from 1969 is compiled in the file *AGI\_1969.shp* the aerial photographs of the second inventory are acquired on different dates, depending on the mountain range. Therefore the glacier outlines show different dates (see Tab. 1):

mountain group	year inventory II	year inventory I	area 1998 [km <sup>2</sup> ]	count
Ötztal	1997	1969	155.53	211
Venediger	1998	1969	81.01	101
Glockner	1998	1969	59.84	78
Stubai	1997	1969	53	117
Zillertal	1999	1969	51.72	136
Silvretta	2002	1969	20.33	48
Ankogel	1998	1969	16.15	52
Sonnblick	1998	1969	9.74	31
Granatspitz	1998	1969	7.52	31
Dachstein	2002	1969	5.83	8
Verwall	2002		5.08	35
Schober	1998		3.49	26
Rieserferner	1998		3.13	10
Hochkönig	2002	1969	1.87	3
Rätikon	1996	1969	1.6	2
Lechtal	1996		0.69	14
Deferegger	1998		0.43	7
Karnische	1997		0.18	1
Samnaun	2002		0.11	3
Allgäu	2000		0.09	1

- the new inventory is compiled in the file *AGI\_newdate.shp*
- the spatial extent of the individual glaciers is given:
  1. measured glacier area for the year given in tab. 1 (column: a\_newdate)
  2. homogenized glacier area for 1998 (column: area1998) as explained in Lambrecht and Kuhn (2007)
- an example of the attribute table:

FID	Shape *	nr	area1969	area1998	minhoehe	maxhoehe	delta a	year	a_newdate	name
0	Polygon ZM	9067	5291292,2735	4612831,88382	2444,7	3480	-678460,38968	1999	4560642,82306	Schlegeis Kees
1	Polygon ZM	9068	467557,904122	362829,704868	2534,6	2968,6	-104728,199254	1999	354773,68954	Roet Kees
2	Polygon ZM	9066	1138204,2133	988946,081618	2586,2	3469,1	-149258,131682	1999	977464,686873	Furtschagl Kees
3	Polygon ZM	9069	121270,654038	60045,176072	2518,5	2755,2	-61225,477966	1999	55335,52392	Hochsteler Kees

wherein:

- FID* and *Shape\** are ESRI-internal columns that do not have a specific significance
- nr* is the ID-number for each individual glacier
- area1969* is the extent in 1969 [m<sup>2</sup>]
- area1998* is the extent in 1998 [m<sup>2</sup>] (homogenized for glaciers with a different acquisition year as 1998)
- minhoehe* is the glacier's minimum elevation
- maxhoehe* is the glacier's maximum elevation
- delta\_a* is the area change between *area1969* and *area1998*
- year* is the acquisition year
- a\_newdate* is the area at the time of the acquisition of the second inventory (e.g. if year is 1999, the area in 1999).
- name* the glacier's name according to maps from the Austrian Alpine Club

- the data sets should be cited as:

**Inventory 1969:**

Gross, G., 1987. Der Flächenverlust der Gletscher in Österreich 1850–1920–1969. *Zeitschrift für Gletscherkunde und Glazialgeologie*, 23(2), 131-141.

**Inventory 1998:**

Lambrecht, A. and M. Kuhn. 2007. Glacier changes in the Austrian Alps during the last three decades, derived from the new Austrian glacier inventory. *Annals of Glaciology*, 46, 177-184.

- contact : meteorologie@uibk.ac.at

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Literature to the Austrian glacier inventories:

**Abermann, J., A. Lambrecht, A. Fischer and M. Kuhn. 2009. Quantifying changes and trends in glacier area and volume in the Austrian Ötztal Alps (1969-1997-2006). *The Cryosphere*, 3(2), 205-215.**

**Abermann, J., A. Fischer, A. Lambrecht and T. Geist, 2010: On the potential of very high-resolution repeat DEMs in glacial and periglacial environments. *The Cryosphere*, 4, 53–65.**

**Gross, G., 1987. Der Flächenverlust der Gletscher in Österreich 1850–1920–1969. *Zeitschrift für Gletscherkunde und Glazialgeologie*, 23(2), 131-141.**

**Kuhn, M., A. Lambrecht, J. Abermann, G. Patzelt and G. Gross. 2009. *Die österreichischen Gletscher 1998 und 1969, Flächen und Volumenänderungen*. Vienna, Austrian Academy of Sciences Press.**

**Lambrecht, A. and M. Kuhn. 2007. Glacier changes in the Austrian Alps during the last three decades, derived from the new Austrian glacier inventory. *Annals of Glaciology*, 46, 177-184.**