Annual mass balance of Swiss glaciers in 2025/2026

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Summary

The annual ice loss was measured on 23 glaciers throughout the Swiss Alps within the programme Glacier Monitoring Switzerland (GLAMOS) in September 2026. These measurements extend multi-decadal observational series that are essential to document the decline of mountain glaciers, and to understand the corresponding impacts. This year's results show an extraordinary ice loss. After a winter season with very little snow, especially in the Eastern and Southern parts of the Alps, long-lasting and intense heat waves between May and September quickly pushed the mass balance to the second-lowest value on record after 2022. For some glaciers, even all-time records were reached. With an average mass balance of –2.9 meters water equivalent, the hydrological year 2025/2026 is extremely negative. Extrapolated to all glaciers, this corresponds to further reduction of the Swiss ice volume by 5.5%. In 2022 to 2026, melt rates have been more than twice as high as in any previously monitored 5-year period, resulting in an ice volume loss of almost 20% since 2021.

Zusammenfassung

Im Rahmen des Schweizer Gletschermessnetzes (GLAMOS) wurde im September 2026 der jährliche Eisverlust auf 23 Gletschern ermittelt. Diese Messungen fügen sich in eine langjährige Messreihe ein, die zentral ist, um den Rückgang zu dokumentieren und die Auswirkungen zu verstehen. Die diesjährigen Ergebnisse zeigen einen ausserordentlich starken Eisverlust. Nach einem Winter mit wenig Schnee, vor allem im Osten und im Süden, haben langanhaltende und intensive Hitzewellen zwischen Mai und September die Massenbilanz schnell auf den zweittiefsten Wert seit Beginn der Aufzeichnungen gedrückt, unmittelbar nach dem Rekordjahr 2022. Bei einigen Gletschern wurden sogar absolute Rekordwerte erzielt. Mit einer durchschnittlichen Massenbilanz von –2,9 Metern Wasseräquivalent ist das hydrologische Jahr 2025/2026 äusserst negativ. Hochgerechnet auf alle Gletscher entspricht dies einer Reduktion des Eisvolumens um 5,5%. Zwischen 2022 und 2026 war der Verlust mehr als doppelt so hoch, wie in jeder vorherigen 5-Jahresperiode. Seit 2021 führte dies zu einem Volumenverlust von fast 20 %.

(Left) The height of the pole illustrates the melt in 2026 at Konkordiaplatz, Grosser Aletschgletscher. (Right) Glaciologists on the quickly retreating Findelgletscher close to Zermatt. (A. Linsbauer, M. Huss)

1. Measurements and basic approach

Within the standard observational programme of Glacier Monitoring Switzerland (GLAMOS) 23 glaciers were visited for end-of-summer measurements of ice melt and (where applicable) snow accumulation in September 2026 (Fig. 1). The aim of these surveys is to determine the glacier-wide annual mass balance, and thus to prolong multi-decadal observational series that are crucial for understanding the effects of climate change on glaciers. The annual mass balance refers to the total mass added to or removed from each glacier over one hydrological year (1 Oct- to 30 Sept.) and corresponds to the sum of winter snow accumulation and summer melting of snow, firn and ice.

Long-term measurement programmes (>100 years in some cases) are ongoing on the surveyed glaciers that are distributed throughout all glacierized mountain regions of the Swiss Alps. The surveys were intensified with additional monitoring sites ca. 15-20 years ago, including more detailed measurements of snow water equivalent on glaciers at the end of the winter season (see GLAMOS, 2026a) to infer seasonal mass balance. Insights into seasonal mass balance dynamics are crucial for disentangling the effects of snow accumulation (determined mainly by variations in solid precipitation) and snow/firn/ice melt (determined by variations in air temperature and solar radiation).

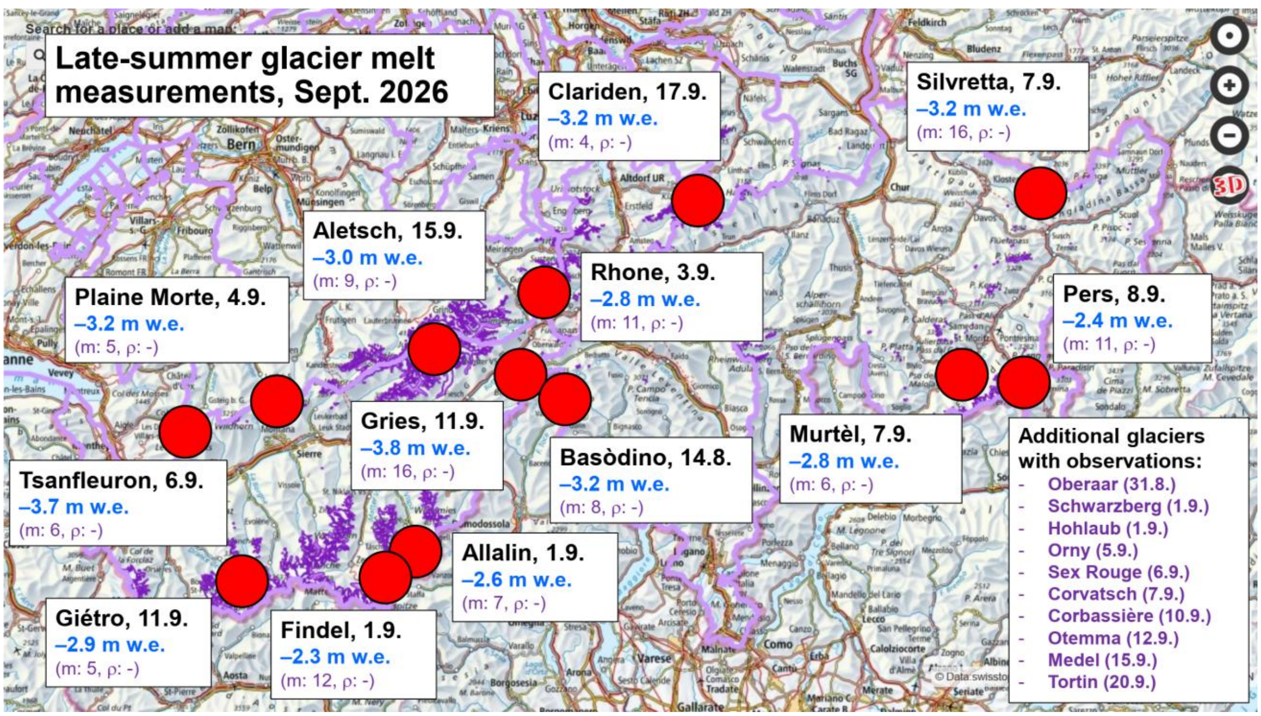

Figure 1: Overview of mass balance measurements performed on Swiss glaciers in September 2026. For glaciers with important long-term observations (boxes) the date of the survey, as well as the glacier-wide annual mass balance (blue) in meters water equivalent (m w.e.) is given. Values are homogenized to the hydrological year (1.10.-30.9.) for comparability. The number of point mass balance measurements (*m*) and the number of snow density measurements (*ρ*), if applicable, is stated. Light purple boundaries show hydrological catchments. Visits on additional glaciers with shorter series or lower observational intensity are listed on the lower right.

On each glacier, a network of between 4 and 16 point measurement sites allows estimating the glacier-wide annual mass balance. Aluminum or plastic poles are drilled into the ice and provide a local observation of the ice layer melted at the specific location over time periods of about one year (GLAMOS, 2026b). These mass balance stakes are redrilled at their original location during the late-summer survey to compensate for local ice flow. In the accumulation area, mass balance stakes allow locating a snowedin surface horizon marked by sawdust down to which the snow depth and the density of the accumulated snow is sampled (GLAMOS, 2021). Subsequently, all point measurements of ice ablation or snow accumulation are converted to water equivalent and are spatially extrapolated to the scale of the entire glacier using a model-based approach that is taking into account the spatial variability and inhomogeneities in sampling (Huss et al., 2021; GLAMOS, 2025, Appendix A.1). Furthermore, this approach resolves the daily glacier-wide mass balance and thus allows homogenizing the results to common and thus comparable time periods of the hydrological year (1 October to 30 September).

Measurement conditions in late summer 2026 were characterized by warm and stable weather conditions in all regions of the Swiss Alps. This allowed us to complete all relevant glacier observations by 17 September already (Fig. 1, Appendix A.1). At some sites, surveys may be repeated later in the year to complement the data set or to capture melt processes occurring after the late-summer field visit. On all surveyed glaciers, substantial ice ablation was observed extending to the highest observation points at over 3300 m a.s.l. This necessitated the redrilling of all stakes where measurements are conducted. All winter snow had disappeared even at the topmost measurement sites. Therefore, no density sampling of accumulated snow was required on any of the surveyed glaciers.

2. Results

Summary figures for all glaciers investigated are shown and interpreted below. The Appendix contains glacier-specific figures allowing in-depth insights regarding different variables, such as the spatial distribution of annual surface mass balance over the glacier, the temporal dynamics of glacier mass change during the present year, or the relation of 2025/2026 with respect to previous periods.

Point observations of mass balance at the measurement sites were mostly close to those observed in the record year 2022. At most locations, the maximal melt rates of 2022 were not quite reached but at some sites, the observed losses were unprecedented since the measurements started (Appendix A.2). This was the case, for example, on the tongue of Grosser Aletschgletscher, Rhonegletscher and Griesgletscher. The highest local annual ablation reaches almost 10 meters of ice on glacier tongues extending to low elevation (e.g. Rhone) and even about 13 meters of ice for the lowermost site on Grosser Aletschgletscher (at 1980 m a.s.l.). Local snow accumulation, and thus formation of new firn, could not be observed within our measurement network even though it is likely that local patches of winter snow survived the summer at very high elevation, or in highly shaded, avalanche-fed places. On some monitored glaciers, the seasonal snow cover was already completely lost up to the highest elevations in mid-July, i.e. the bare-ice surface was entirely exposed during the intense July and August heat waves. On these glaciers even the topmost measurement points experienced melt rates of 2.5 to 4 meters of ice (e.g. Clariden, Giétro, Gries, Murtèl, Otemma, Plaine Morte, Silvretta, Tsanfleuron). Such massive losses in the former accumulation area – where glaciers should be covered by several meters of winter snow by September to be in balance – indicates how inconsistent the elevation and extent of these glaciers are with the current climate. Even the highest local mass balance measurement at 3800 m a.s.l. on a small South-facing glacier at Alphubel has shown a melting of several meters of ice.

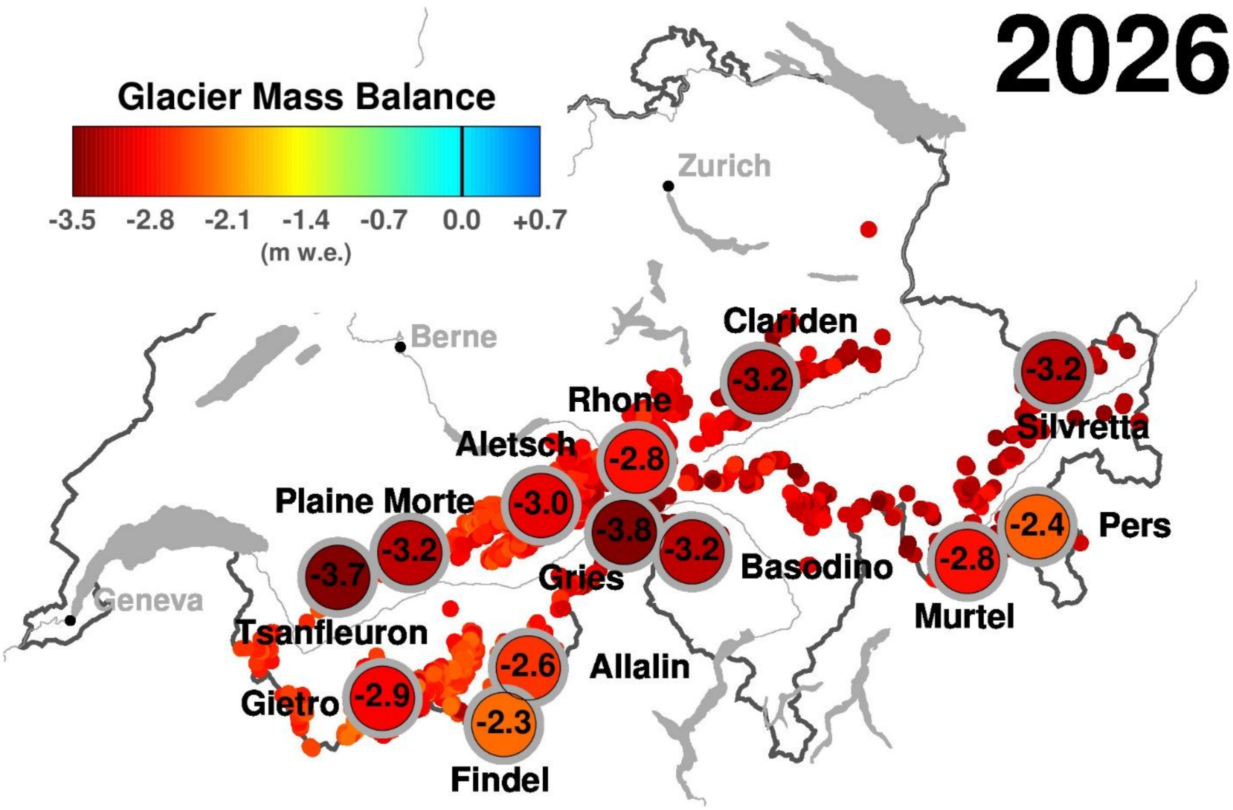

Figure 2: Glacier-wide annual mass balance for the most important, surveyed glaciers over the hydrological year (1 Oct. 2025 to 30 Sept. 2026) in meters water equivalent (m w.e.). Smaller dots show the mass balance extrapolated to other glaciers in Switzerland. Note that the mass balance may vary between neighbouring glaciers, and the monitored sites show different long-term average mass balance.

Glacier-wide annual mass balance values over the hydrological year (Fig. 2) – to be understood as average thickness changes in terms of water over the entire glacier surface – range between –3.8 m w.e. (Gries) to –2.3 m w.e. (Findel). The variations between individual glaciers are relatively large as certain glaciers typically lose mass at a higher rate than others due to differing sensitivity to shifts in climate (e.g. Fischer et al., 2015; Hugonnet et al., 2021). An extreme glacier-wide mass balance beyond –3 m w.e. has been observed on ten glaciers (Basódino, Clariden, Corvatsch, Gries, Grosser Aletsch, Medel, Otemma, Plaine Morte, Sex Rouge, Tsanfleuron), or on almost half of the monitored sites. This is an highly negative value that was only measured for some Swiss glaciers in the record year 2022 but in no other year since the beginning of the regular observations in 1914.

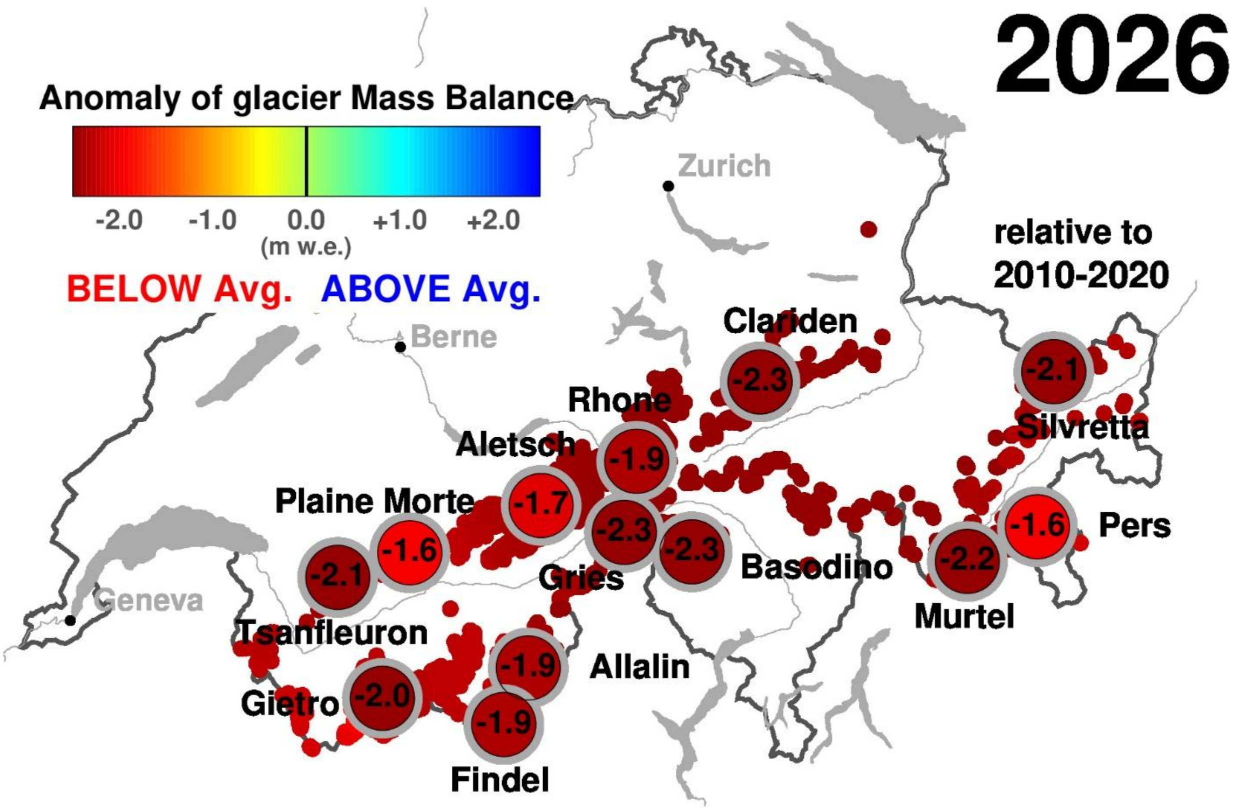

Figure 3: Anomaly of glacier-wide annual mass balance for the most important, surveyed glaciers over the hydrological year (1 Oct. 2025 to 30 Sept. 2026) relative to the average of the period 2010-2020 in meters water equivalent (m w.e.). Smaller dots show the mass balance anomaly extrapolated to other glaciers in Switzerland for better visualizing the pattern. Yellow-red colours indicate below-average conditions with respect to glacier mass balance.

Glacier-wide annual mass balance observed for the hydrological year 2025/2026 is far below the average of the period 2010-2020, considered here as a reference. The mass balance anomaly is thus highly negative (Fig. 3). As absolute values of glacier-wide mass balance (Fig. 2) are difficult to be directly compared among glaciers due to differing long-term trends in mass loss, we here also discuss the individual glaciers' deviation from their mean. Mass balance anomalies with respect to 2010-2020 are around –2 m w.e. in all regions of Switzerland, which is highly exceptional. Even though there is no clear pattern, the data indicate somewhat less exceptional glacier loss in the Bernese Oberland. This is most likely driven by snow conditions at the end of winter that were not as significantly below average as in the rest of Switzerland. The most negative annual mass balance anomalies were found for Basòdino, Clariden and Gries, three glaciers with intermediate size only extending to limited elevation and therefore being particularly vulnerable to conditions like in 2026. Also, glaciers in the Southern Valais (Allalin, Giétro, Findel) and in Eastern Switzerland (Murtèl, Silvretta) show very high negative anomalies with respect to the 2010-2020 average (Fig. 3).

The major ice losses in the hydrological year 2025/2026 can be attributed to the following drivers:

(1) The situation for glaciers in the Swiss Alps was already precarious at the end of the mostly very dry winter season, with a Swiss-wide snow deficit on glaciers of 25% (GLAMOS, 2026a). The early depletion of that weak snow layer led to a very long period of bare-ice ablation.
(2) The summer months June to August were the hottest on record (MeteoSwiss, 2026). Subsequent intense heat waves were at most interrupted by a few days of normal temperatures, and intermittent cooler phases did not exist. Long-lasting heat has the highest potential to cause large cumulative losses in glacier ice.
(3) Additional factors such as the lack of snowfall events during the summer season, or the mostly sunny weather during the summer months with high solar irradiance, further contributed to the melting but seem less decisive than the high air temperatures and the limited winter snow layer.

Despite the air temperature records of 2026, **the glacier mass loss of the year 2022 was not reached** by a small margin at a Swiss-wide scale. We attribute this to three reasons whose relative importance, however, remains unquantified:

(4) Spring 2026 saw only limited Saharan dust depositions on the snow surface. The albedo reduction with a dirty snow surface is substantial (e.g. Réveillet et al., 2022) and increases the rate of snow depletion. This contrasts with 2022 when Saharan dust significantly accelerated early-season snow melt, thus further extending the bare-ice ablation season (Roussel et al., 2025).
(5) In comparison to 2022, snow depth on 30 April (considered as the reference date for the end of winter) was slightly less below average in 2026 (25% versus 32% deficit). The difference was most important in the regions with large glaciers, such as the Southern Valais. Furthermore, late snow accumulation in early May 2026 added an essential delay to the melt onset in comparison to 2022.
(6) Weather stations at high elevation of the Swiss Alps indicate that solar radiation totals during the summer months June to August were slightly higher in 2022 than in 2026, offering more potential melt energy. Relative humidity was lower in 2026 compared to 2022. Low humidity leads to higher latent heat fluxes by evaporation and therefore represents a relatively minor energy sink that may have contributed to somewhat more limited losses in 2026.

The evolution of glacier mass balance throughout the hydrological year 2025/2026 started with optimal conditions in October (Fig. 4). Snow events in late September and October 2025 resulted in an early growth of the snow layer on glaciers. From December to mid-February, however, the weather remained exceptionally dry and snow accumulation started to lag substantially behind normal levels, especially in the East and South of Switzerland. Abundant snow falls in February and partly also in March brought back snow depths on glaciers closer to the long-term average even though not reaching it (see Fig. 4 and Appendix A.3). The month of April was extremely dry and triggered some first melting on glacier tongues. The terminus of Grosser Aletschgletscher, for example, already became snow-free in mid-April. After a cooler phase with some snowfalls in early May the peak snow accumulation was reached on 19 May which is only slightly earlier than on average. A first intense heat wave in the second half of May and a long-lasting heat wave in June resulted in excessive melt rates and a very early depletion of the snow cover below ca. 2800 m a.s.l. (Fig. 4). The "Glacier loss day" (Voordendag et al., 2023), i.e. the day when overall mass balance becomes negative and all snow mass added during winter is melted, happened on 2 July on average for 13 glaciers with detailed data, the second-earliest date after 2022 and five days earlier than in 2025 (Fig. 5). With only minor interruptions, the hot and dry conditions continued until the end of September leading to excessive melt rates up to the highest elevations. This is also underscored by 76 days with a zero-degree line above 4000 m a.s.l. between May and September. This is more than twice as much as on average and a new record value. After a certain cooling in early September and locally a bit of fresh snow above ca. 3300 m a.s.l., the warm weather lasted until the end of the month resulting in continued melting of the almost completely bare glaciers (Fig. 4).

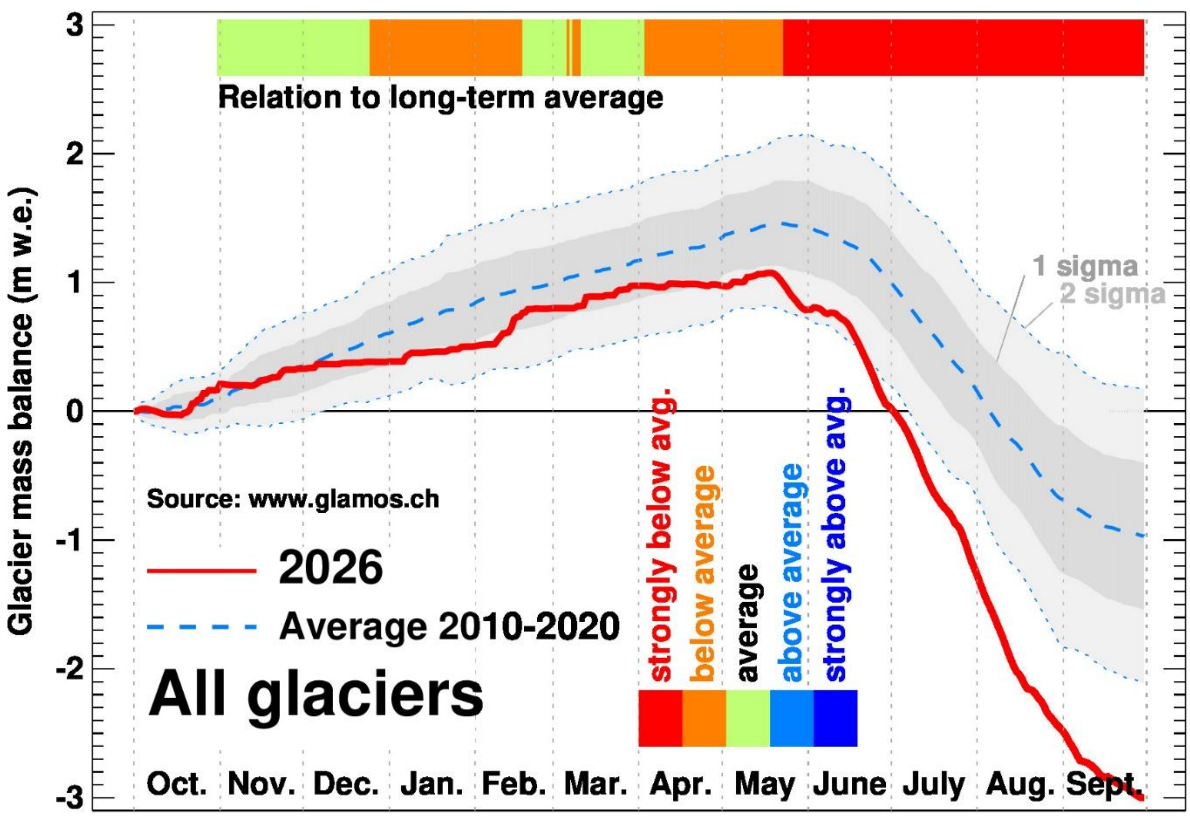

Figure 4: Cumulative daily mass balance in the hydrological year 2025/2026 (red) in comparison to the average and spread of the years 2010-2020. The top bar indicates periods throughout the year with average (green), below- (orange/red) or above-average (light/dark blue) mass balance. The arithmetic average of the main surveyed glaciers (see Figures 2 and 3) is shown.

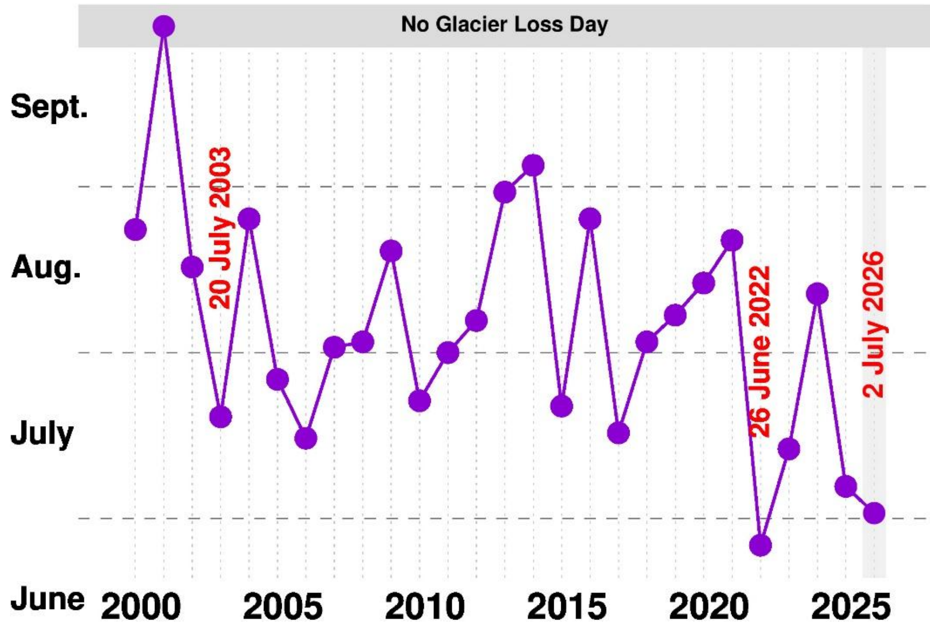

Figure 5: Date of the "Glacier loss day" (Voordendag et al., 2023) since the year 2000 evaluated from the arithmetic average of 13 glaciers (see Fig. 2) with detailed seasonal mass balance surveys. Typically, the Glacier loss day occurred in August, with a clear trend towards earlier occurrence.

Ranking all years since 1950 – observational coverage is only considered sufficient thereafter – illustrates during which periods of the year the current period 2025/2026 was most exceptional (Fig. 6). In October 2025, conditions were better than in most years. The rank then continuously decreased throughout the mostly dry winter season. Already in late May, 2026 ranked among the worst years after an early heat wave. From the end of June onwards to September, the mass balance year consistently was the second most negative during the period 1950-2026, only overshadowed by 2022.

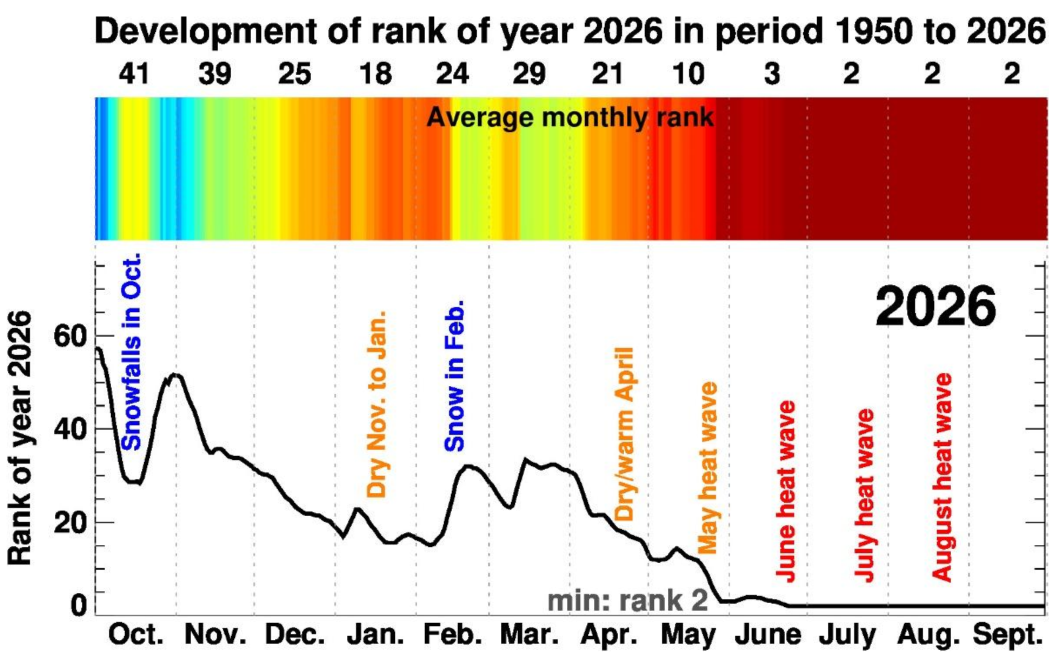

Figure 6: Daily temporal development of the rank of the year 2026 referring to all Swiss glaciers with respect to the individual years 1950 to 2026. Colours (top) visualize the rank from high (blue) to low (red) over the hydrological year, and a time series annotated with special events is shown (bottom).

For regionalizing the findings on glacier mass balance measured at the 23 sites throughout the Swiss Alps, we extrapolate annual mass balance anomalies homogenized to the hydrological year (1 Oct. - 30 Sept.) to all 1'300 glaciers in the Swiss Glacier Inventory SGI2023 (GLAMOS, 2026b) according to an approach as proposed in Dussaillant et al. (2025) or van Tiel et al. (2026). We thus account for differences in regional sampling density and include long-term trends of glacier-specific mass loss for all glaciers based on the geodetic mass balance (Fischer et al., 2015). The area of each glacier is updated based on a volume-area-scaling approach to the year 2026. Furthermore, measured seasonal and modelled daily mass balance variations are superimposed on computed annual glacier-specific mass changes, thus permitting long- and short-term dynamics of glacier mass change to be inferred at the scale of the Swiss Alps.

For the hydrological year 2025/2026, an **average mass balance of –2.86 m w.e. yr^{-1}** is found for all Swiss glaciers (Fig. 7). This is only slightly below the record-value of 2022 (–3.13 m w.e.), but substantially more negative than in previous years with major losses such as 2023 or 2003. The five years 2022-2026 stand out with extreme losses. None of the 5-year periods over the last century showed ice loss rates that were only half as negative. This doubling of the melt is particularly impressive with respect to more recent periods, such as between 2010 and 2020 that were already characterized by very rapid glacier retreat. The massive reductions in ice volume in 2026 were partly caused by the deficit in winter snow. In addition, the summer melting (1 May - 30 Sept.) was 58% above the 2010-2020 average which is highly exceptional with respect to the recent years (Fig. 7). It is notable that during the last five years, four years (2022, 2023, 2024, 2026) showed melt totals that are amongst the highest ever.

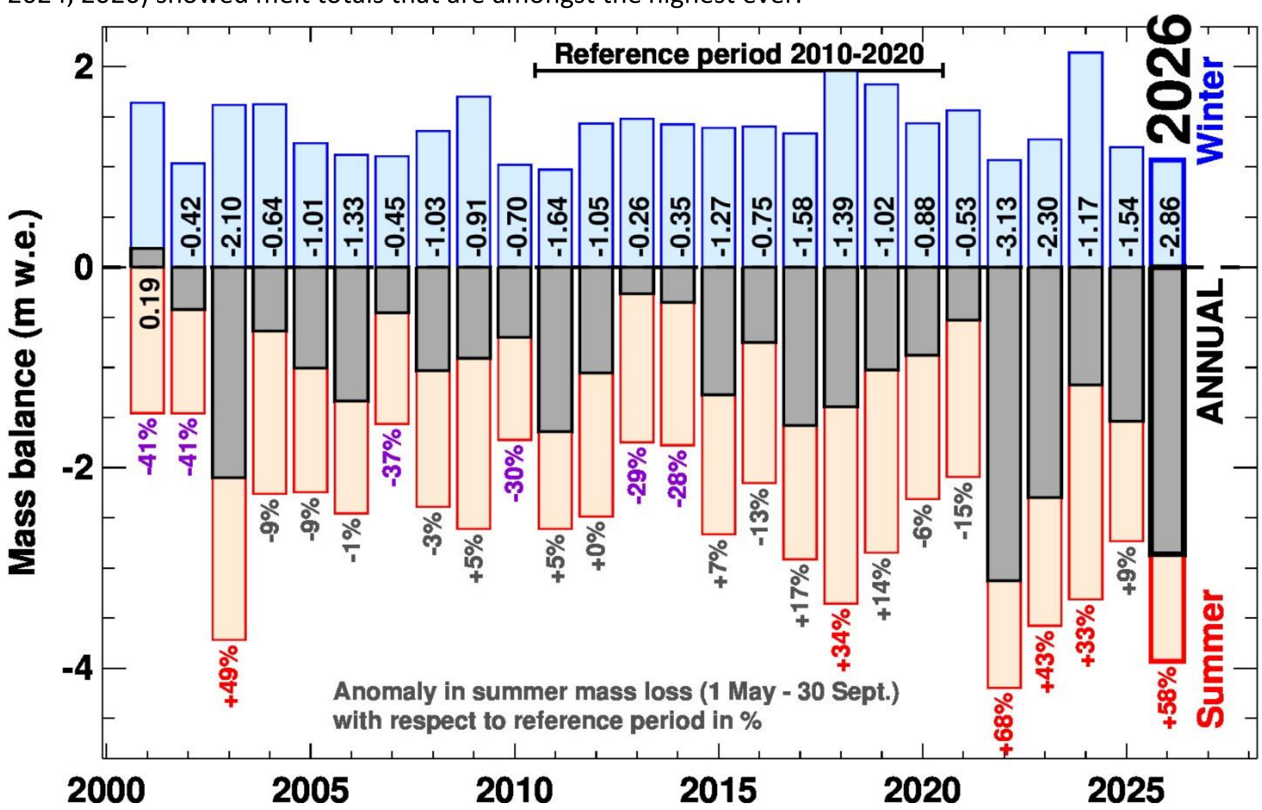

Figure 7: Seasonal mass balance extrapolated to all glaciers in Switzerland. Annual mass balance (1 Oct. - 30 Sept., dark grey / numbers), winter mass balance (1 Oct. - 30 April, light blue), and summer mass balance (1 May - 30 Sept., light red) is shown. Percentage numbers below the bars indicate the relative anomaly of summer mass balance relative to the period 2010-2020, coded with colours for years with strongly below-average melt (purple), average melt (grey) and strongly above-average melt (red).

When relating the annual mass balance 2025/2026 to the previous measurements (Appendix A.4), the results indicate that this year ranks first – even before 2022 – for four large glaciers (Allalin, Clariden, Grosser Aletsch, Rhone). For all other surveyed glaciers, 2026 is the second most negative year observed. Seasonal mass balances at the level of individual monitoring sites (Appendix A.5) provide insights into the local anomalies in winter accumulation and summer ablation. The pattern of moderately to strongly below-average winter mass balance and very negative summer mass balances is revealed at all sites.

Mass balances at the scale of all Swiss glaciers during individual months were exceptional during several periods of the year (Fig. 8). November, December and especially April were characterized by substantially below-average snow accumulation. No monthly record was achieved over the melting season 2026 (May to September), but it is remarkable that every single month ranges within the years with the most exceptional losses, i.e. around the 5% quantile. Cumulatively these consistently above-average monthly losses led to the extreme glacier mass reduction.

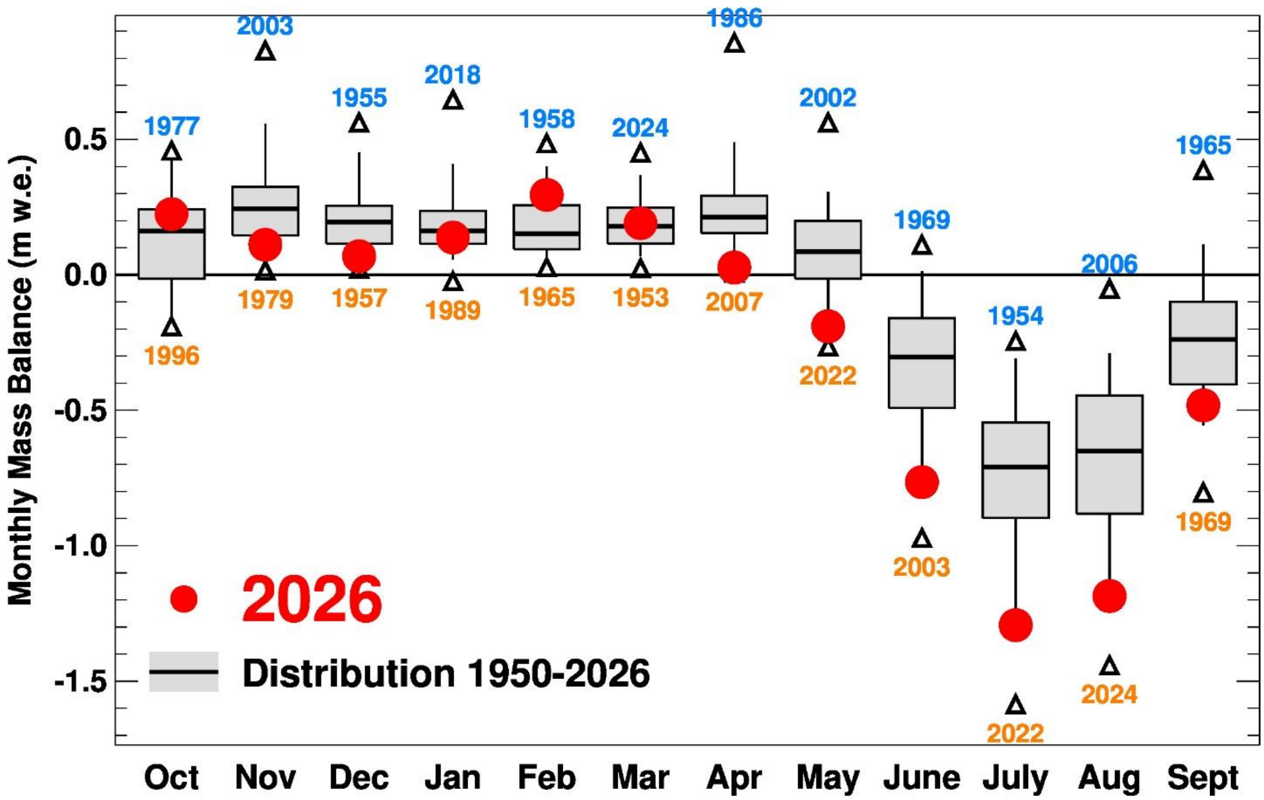

Figure 8: Spread in monthly glacier mass balance during 1950-2026. The results are based on a combination of direct measurements during this period and modelling. Boxes contain 50%, and bars 90 % of the data, while the maximum and minimum value is marked with triangles. The years of monthly record values (maximum/minimum) are spelled out in light blue/orange.

By combining the extrapolated glacier mass change with a complete assessment of the glacier volume in Switzerland (Grab et al., 2021), ice volume series can be prolonged up to today at the scale of individual glaciers, hydrological catchments and the whole of Switzerland. The results indicate that Switzerland still hosted ca. **42.6 km^3 of glacier ice** by the end of 2026 (Fig. 7). This is over 30 km^3 less than in the year 2000. At present, Swiss glacier area is estimated to be 714 km^2, corresponding to a decline of one third relative to 2000.

The annual reduction of Swiss-wide glacier volume relative to the remaining volume mostly fluctuated between ca.–0.5% and –2.5% per year during the two decades 2000 to 2020. The extreme years 2022 (–5.9%) and 2023 (–4.4%) showed unprecedented ice volume losses. With an **ice volume reduction of 5.5%**, 2026 now adds another year with an extreme loss to the records (Fig. 9).

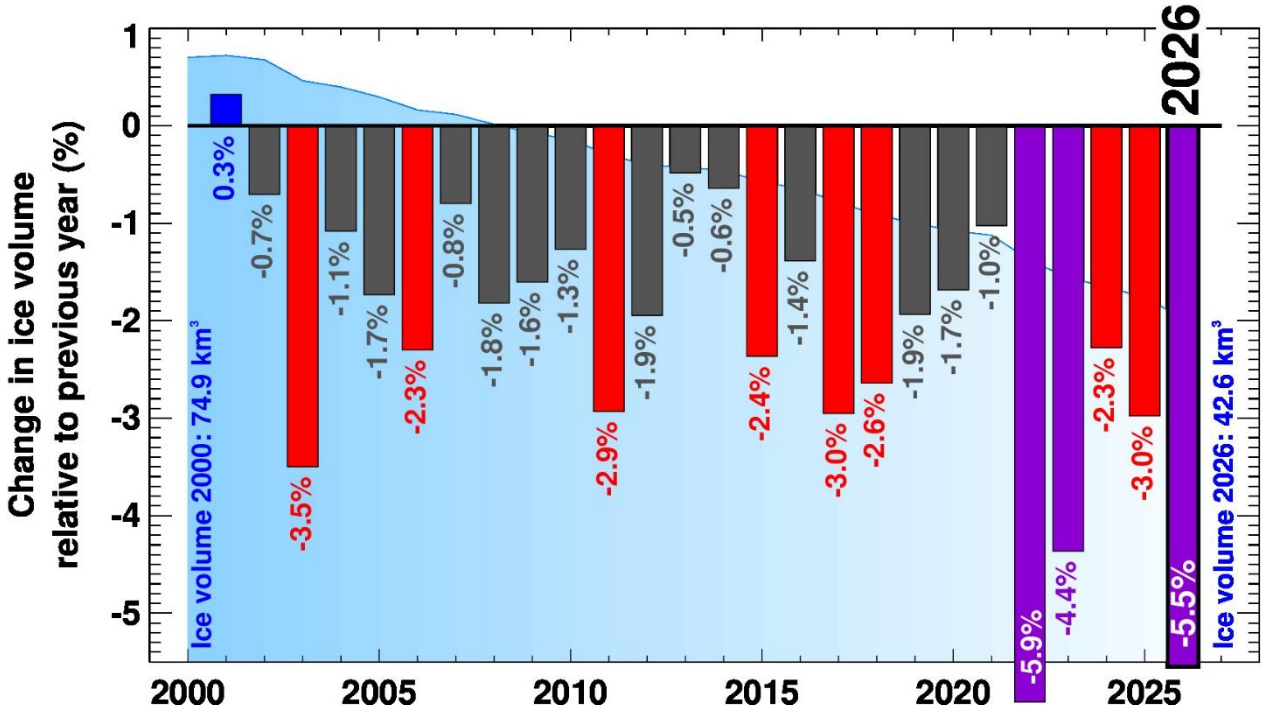

Figure 9: Swiss-wide annual change in glacier volume relative to the remaining ice volume of the previous year. Colours visualize moderate (dark grey), strong (red) and extreme losses (purple). 2026 is highlighted. The blue surface in the background visualizes the temporal evolution of total ice volume.

When considering glacier volume changes over 10-year periods, the present decade sticks out with the by far most important relative ice volume loss. The acceleration trend in the 21st century is striking: While 10% of the Swiss ice volume disappeared in the decade 1990-2000, it was 14% in 2000-2010, 17% in 2010-2020 and **27% over the last decade (2016-2026)**.

The rapid glacier wastage of the last years leads to enormous quantities of melt water running off to downstream areas. The higher the air temperatures and, hence, the melt rates, the more water per unit area is released from long-term storage. While the relative ice volume losses showed very high values in 2022, 2023 and 2026 (Fig. 9), absolute volume changes indicate that the peak melt water release from Swiss glaciers has likely been passed with the recent extreme years (Fig. 10). With a **total ice volume loss of 2.5 km^3**, the year 2026 is only third with respect to the last decades and provided less water to downstream areas than the year 2003 when specific melt rates were 25% lower than in 2026. This is explained by the much smaller glacier area today as a result of the recent major mass reduction. Even with intense melt rates per unit area (Fig. 7), and large relative losses compared to the remaining ice volume (Fig. 9), glaciers release smaller overall quantities of melt water. This declining trend, despite increasing temperatures and snow/ice melt rates, is expected to pose important challenges for the future management of water resources (irrigation, hydropower production, ecology, transportation), especially during drought periods (van Tiel et al., 2026).

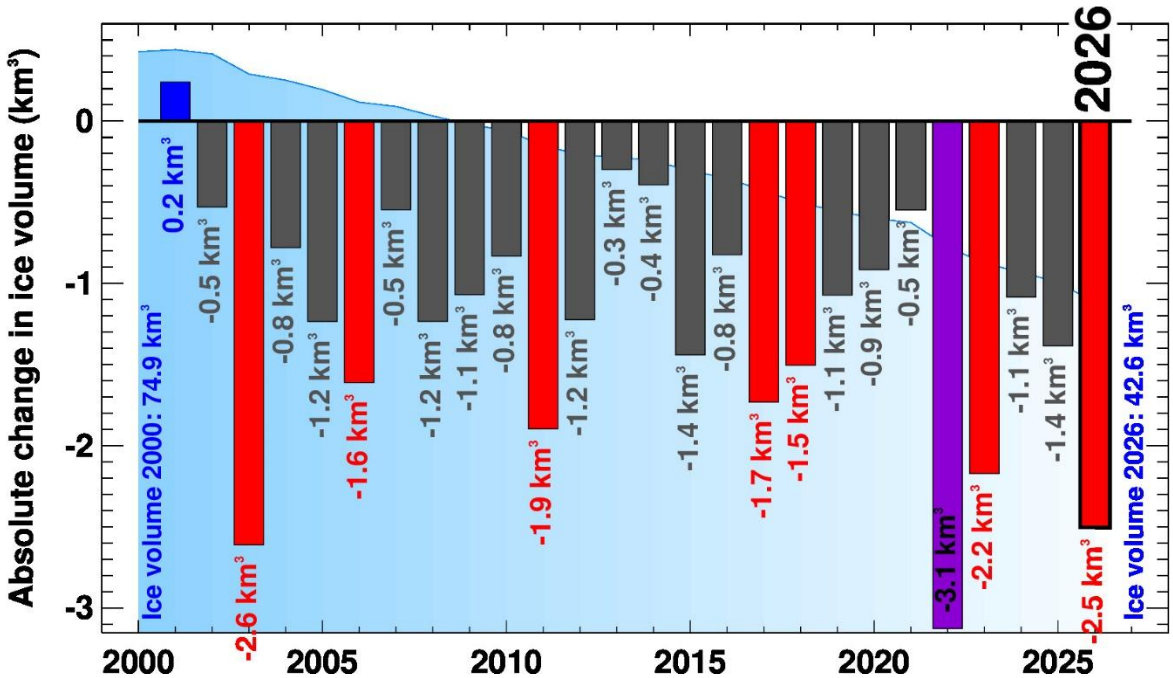

Figure 10: Swiss-wide annual change in absolute glacier ice volume. Colours visualize moderate (dark grey), strong (red) and extreme losses (purple). 2026 is highlighted.

An aspect of glacier change that has become increasingly important during the last years is the disappearance of small glaciers and the disintegration of glacier tongues (Hösli et al., 2025; Huss et al., 2026). Recent years with extreme melting are boosting these processes that cause feedback effects further accelerating local landscape changes. Between 1973 and 2016, more than 1'000 Swiss glaciers completely vanished (Linsbauer et al., 2026). Additionally, about 100 glaciers have disappeared between 2016 and 2023 (GLAMOS, 2026b), and many more will follow (Van Tricht et al, 2026). There are no final figures yet about how many individual glaciers have disappeared during the summer of 2026. An overview will only be gained with the compilation of the next Swiss Glacier Inventory in about 2028. However, photographic reports clearly indicate the complete demise of the Bella Tola Gletscher (VS) and Griessfiren/Plattalvafirn (GL), two glaciers with previously extensive glaciological measurement series. Furthermore, processes of internal decay are increasingly observed on glaciers (Hösli et al., 2025): Due to stagnation of the ice flow, cavities beneath the ice – carved by water and warm air – may grow over several years and then collapse. This results in deep craters that disrupt the glacier tongues and further accelerate retreat.

Disappearance of Plattalvafirn between 2004 and 2026. (Photos: U. Steinegger, M. Huss)

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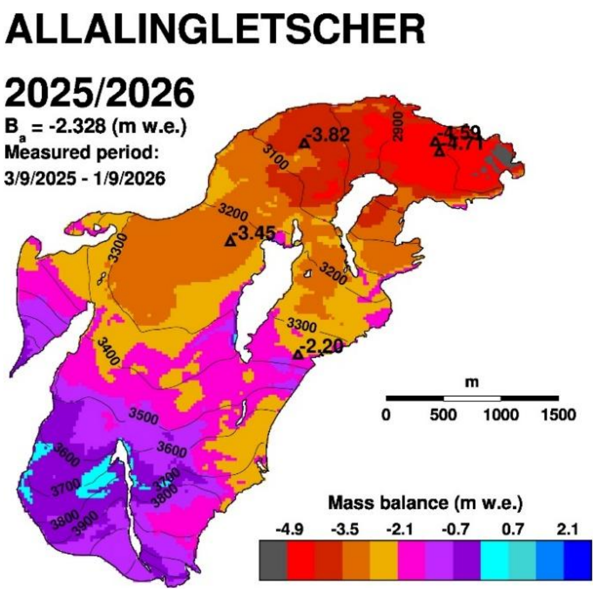
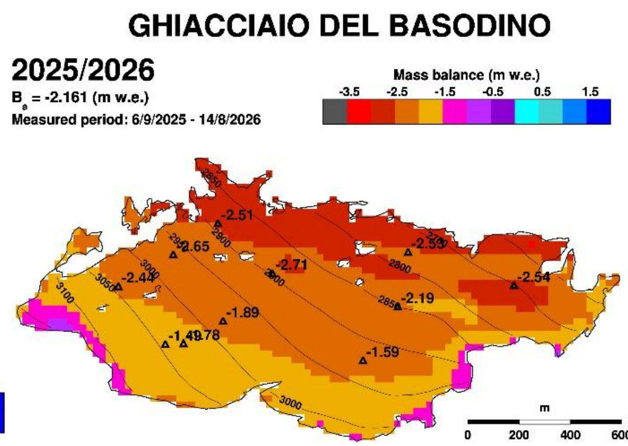
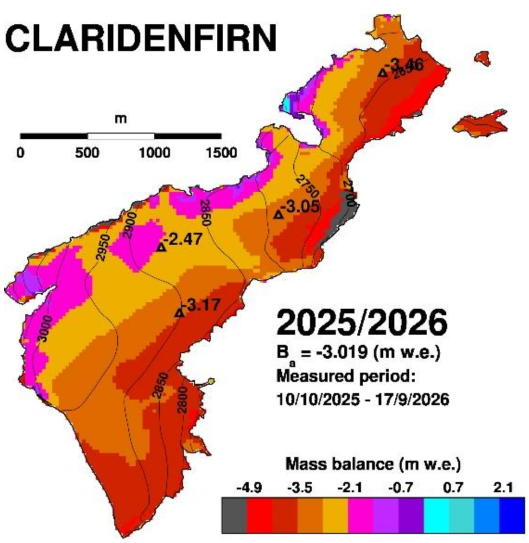
3. Appendix

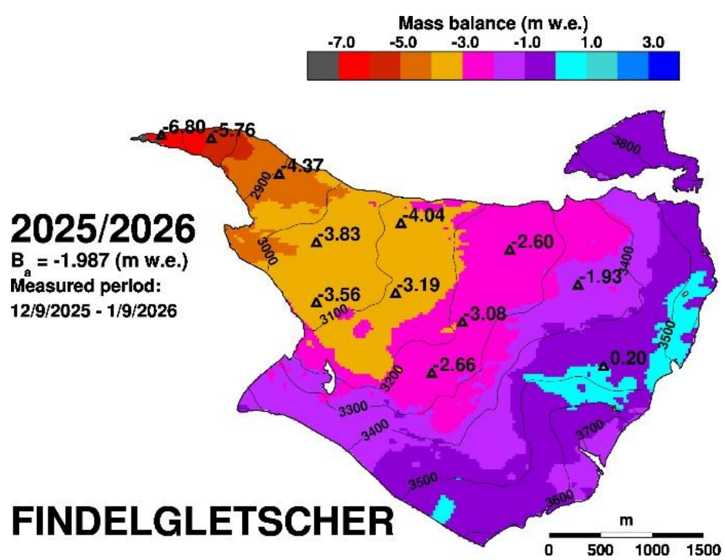
A.1 Spatial distribution of annual mass balance

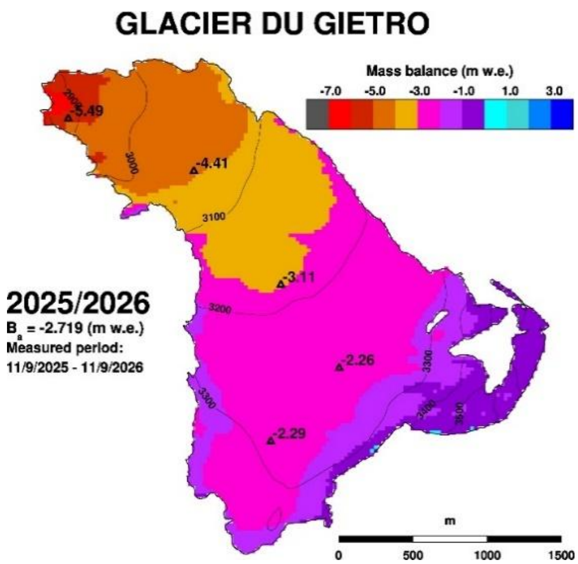
The figures below show the extrapolated annual mass balance distribution in metres water equivalent (m w.e.) during the measurement period (dates are given). Point surface mass balance measurements are indicated with black triangles, and the observed value for the respective period is stated. The spatial extrapolation accounts for temperature and precipitation gradients, as well as for processes of local snow redistribution and topographic differences of solar radiation. Note that the scale of the maps and the range of displayed mass balances differ between the glaciers.

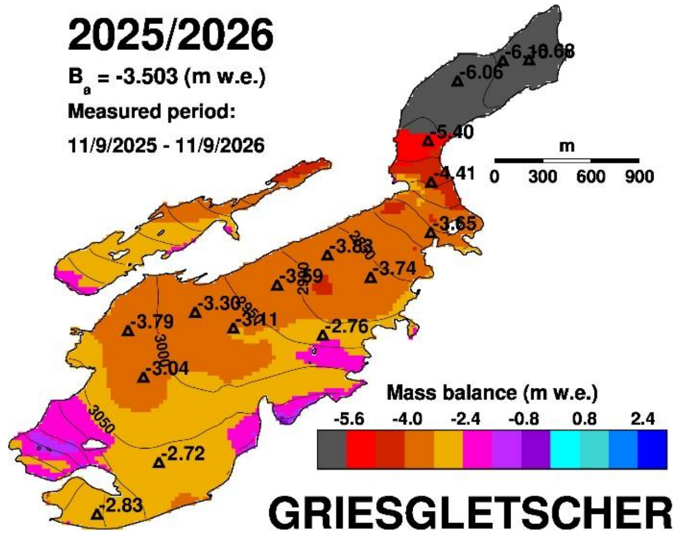


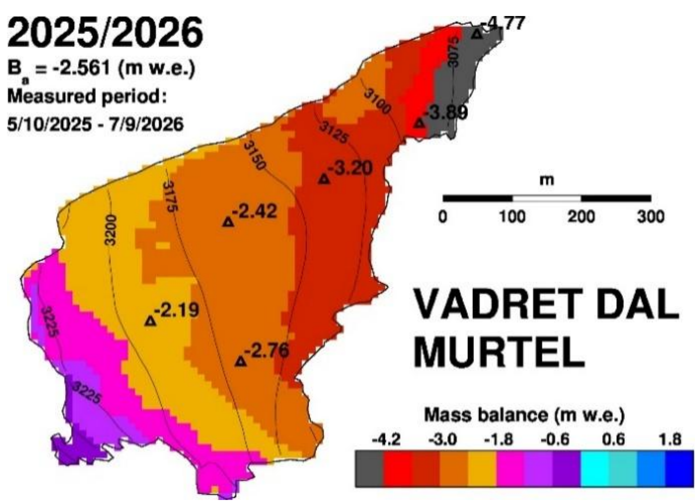


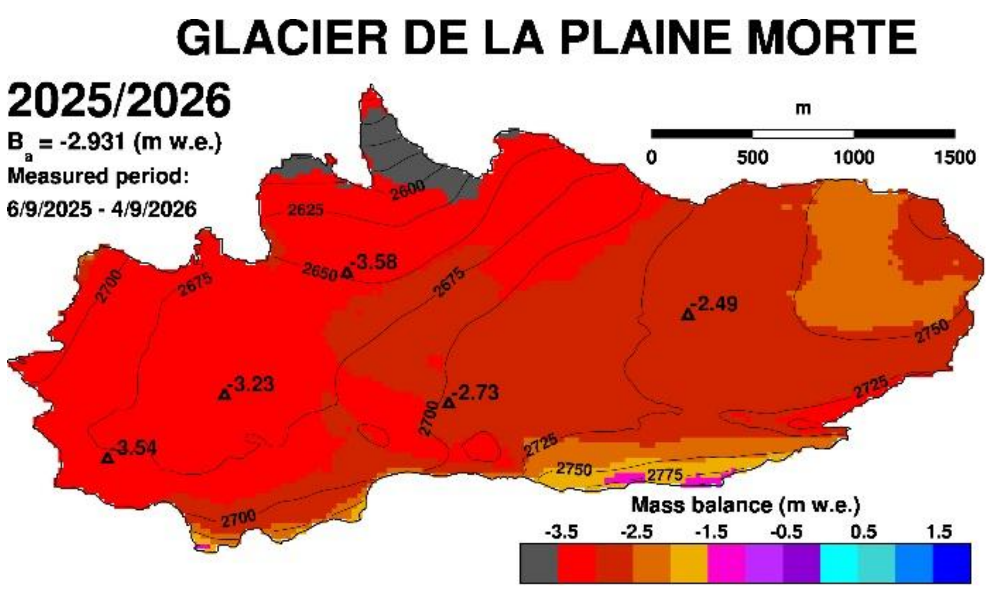




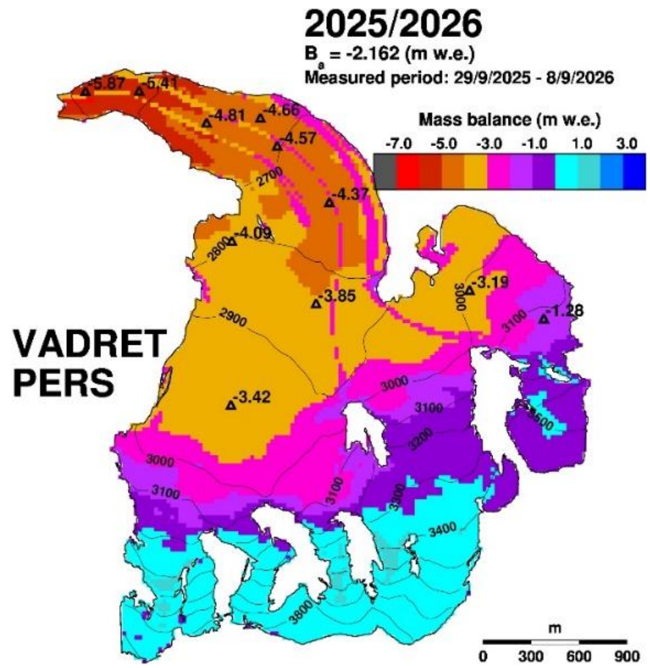

GLACIER DU GIETRO
Mass balance (m w.e.)
-7.0 -5.0 -3.0 -1.0 1.0 3.0
2025/2026
B$_a$ = -2.719 (m w.e.)
Measured period:
11/9/2025 - 11/9/2026
-5.49
-4.41
-3.11
-2.26
-2.29
3000
3100
3200
3300
m
0 500 1000 1500

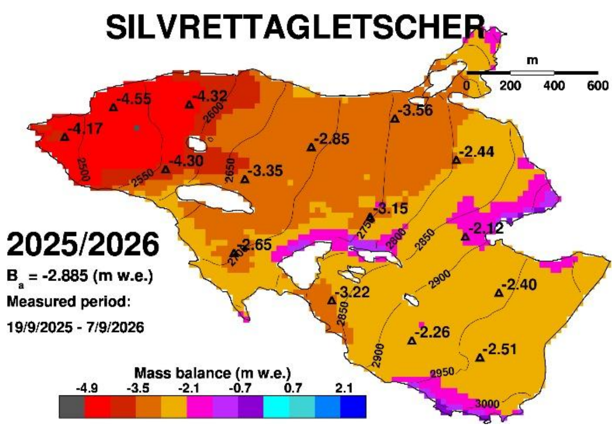

2025/2026
B$_a$ = -3.503 (m w.e.)
Measured period:
11/9/2025 - 11/9/2026
-6.06
-5.40
-4.41
-3.65
-3.85
-3.74
-3.59
-3.30
-3.79
-2.76
-3.04
-2.72
-2.83
3050
m
0 300 600 900
Mass balance (m w.e.)
-5.6 -4.0 -2.4 -0.8 0.8 2.4
GRIESGLETSCHER

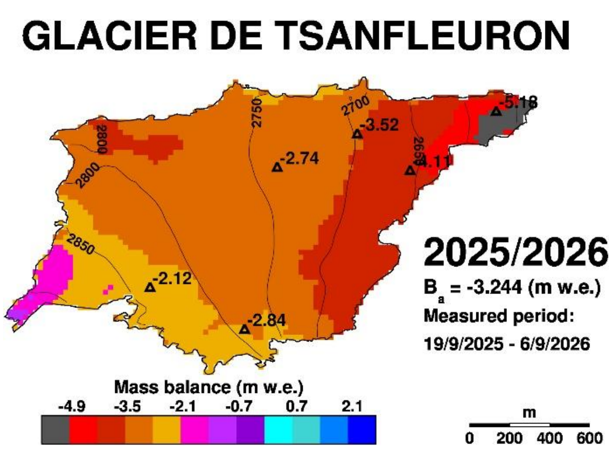

2025/2026
B$_a$ = -2.561 (m w.e.)
Measured period:
5/10/2025 - 7/9/2026
-4.77
-3.89
-3.20
-2.42
-2.19
-2.76
3075
3100
3125
3150
3175
3200
3225
m
0 100 200 300
VADRET DAL
MURTEL
Mass balance (m w.e.)
-4.2 -3.0 -1.8 -0.6 0.6 1.8

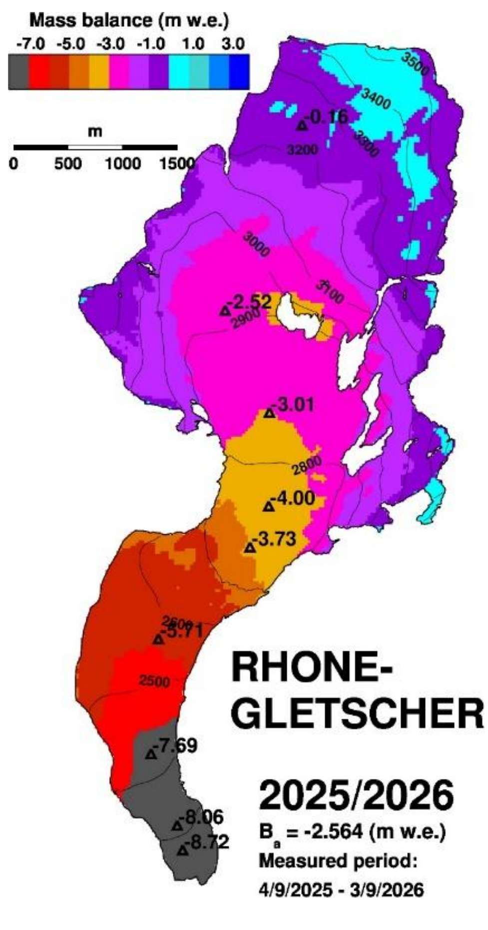

GLACIER DE LA PLAINE MORTE
2025/2026
B$_a$ = -2.931 (m w.e.)
Measured period:
6/9/2025 - 4/9/2026
m
0 500 1000 1500
-3.58
-2.49
-3.23
-2.73
-3.54
2600
2625
2650
2675
2700
2725
2750
2775
Mass balance (m w.e.)
-3.5 -2.5 -1.5 -0.5 0.5 1.5


GROSSER ALETSCHGLETSCHER
2025/2026
B$_a$ = -2.893 (m w.e.)
Measured period: 15/9/2025 - 15/9/2026
Mass balance (m w.e.)
-10.5 -7.5 -4.5 -1.5 1.5 4.5
km
0 1 2 3
-0.13
-2.21
-3.91
-4.82
-5.16
-6.30
-6.50
-8.26
-12.06


VADRET PERS
2025/2026
B$_a$ = -2.162 (m w.e.)
Measured period: 29/9/2025 - 8/9/2026
Mass balance (m w.e.)
-7.0 -5.0 -3.0 -1.0 1.0 3.0
m
0 300 600 900
-5.87
-5.41
-4.81
-4.66
-4.57
-4.37
-4.09
-3.85
-3.19
-1.28
-3.42

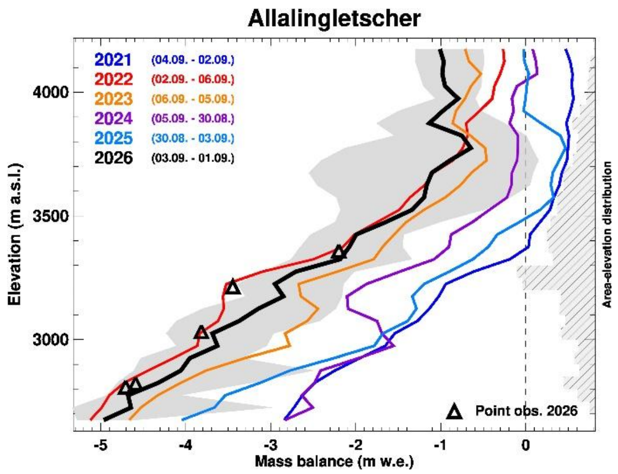

SILVRETTAGLETSCHER
2025/2026
B$_a$ = -2.885 (m w.e.)
Measured period:
19/9/2025 - 7/9/2026
Mass balance (m w.e.)
-4.9 -3.5 -2.1 -0.7 0.7 2.1
m
0 200 400 600
-4.55
-4.32
-4.17
-4.30
-3.35
-2.85
-3.56
-2.44
-3.15
-2.65
-2.12
-3.22
-2.40
-2.26
-2.51

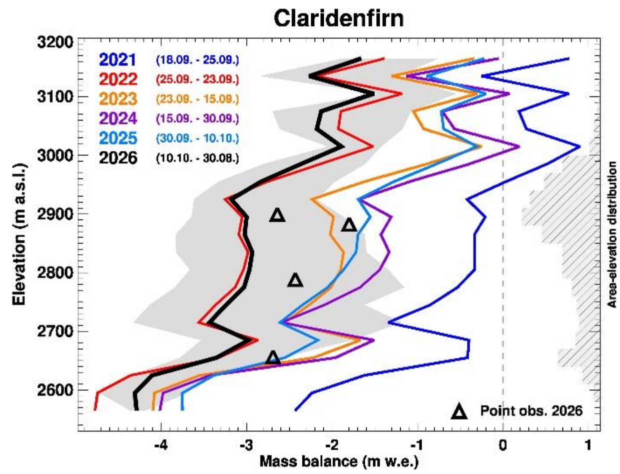

GLACIER DE TSANFLEURON
2025/2026
B$_a$ = -3.244 (m w.e.)
Measured period:
19/9/2025 - 6/9/2026
Mass balance (m w.e.)
-4.9 -3.5 -2.1 -0.7 0.7 2.1
m
0 200 400 600
-5.18
-3.52
-2.74
-4.11
-2.12
-2.84

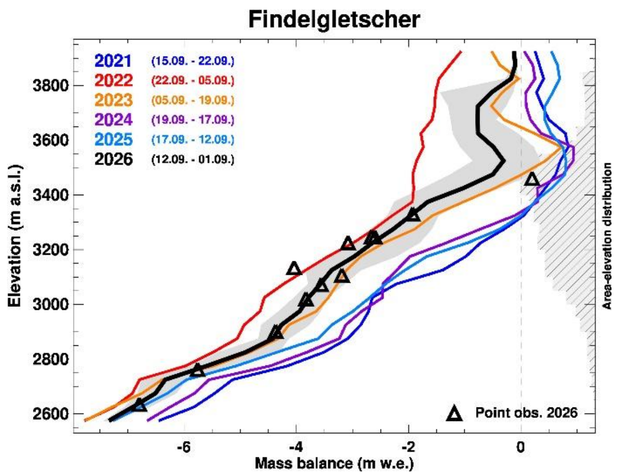

RHONE-GLETSCHER
2025/2026
B$_a$ = -2.564 (m w.e.)
Measured period:
4/9/2025 - 3/9/2026
Mass balance (m w.e.)
-7.0 -5.0 -3.0 -1.0 1.0 3.0
m
0 500 1000 1500
-0.16
-2.52
-3.01
-4.00
-3.73
-5.71
-7.69
-8.06
-8.72

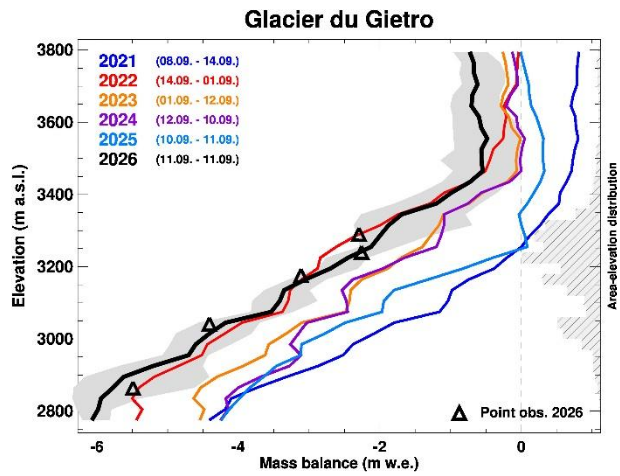
A.2 Elevation distribution of observed annual mass balance 2021-2026

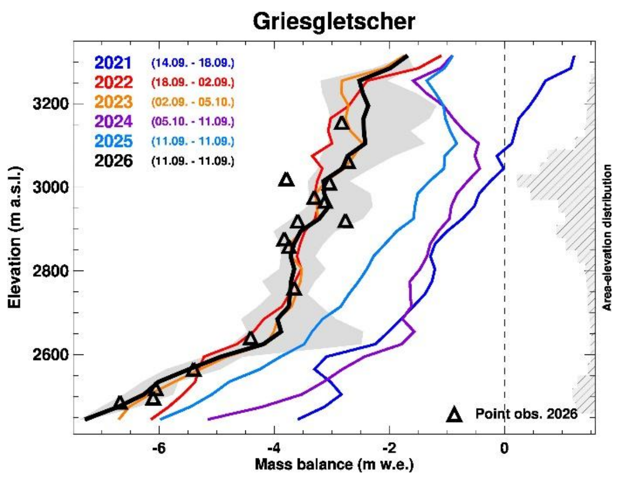
The figures below show the elevation distribution of annual mass balance during measurement period (respective dates are stated) extrapolated to the entire glacier surface over the last six years (2021-2026). The grey band shows the spread of the model-based mass balance of all locations within an elevation band for the year 2026, including effects of topographic shading, snow redistribution and debris coverage. Observed local mass balance is shown with triangles. Note that the x-axis scale differs between the graphs. The glaciers are alphabetically ordered.

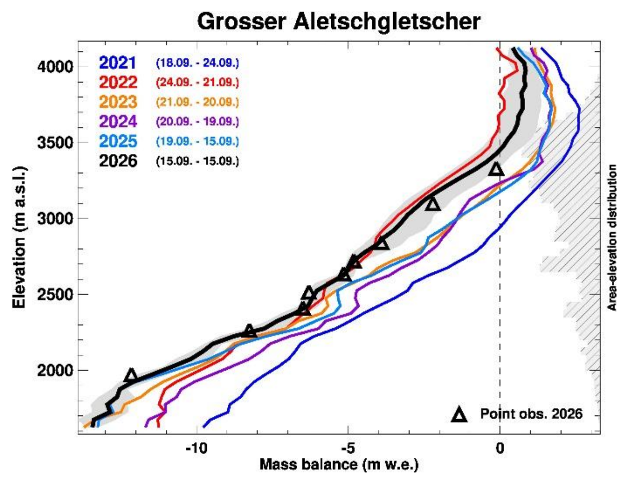


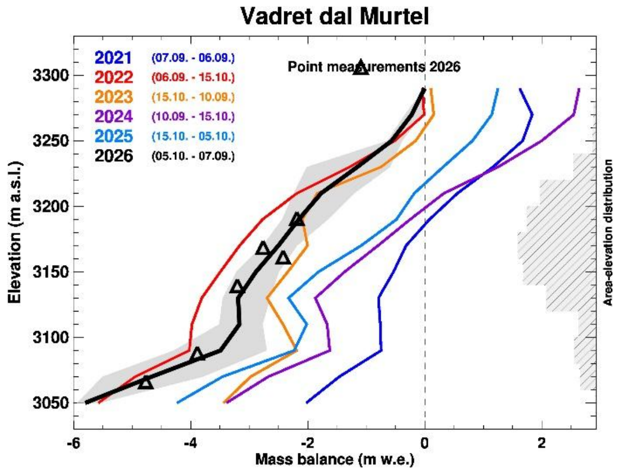


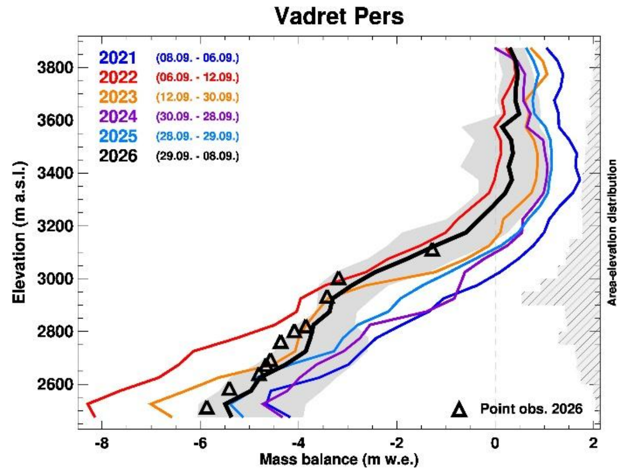


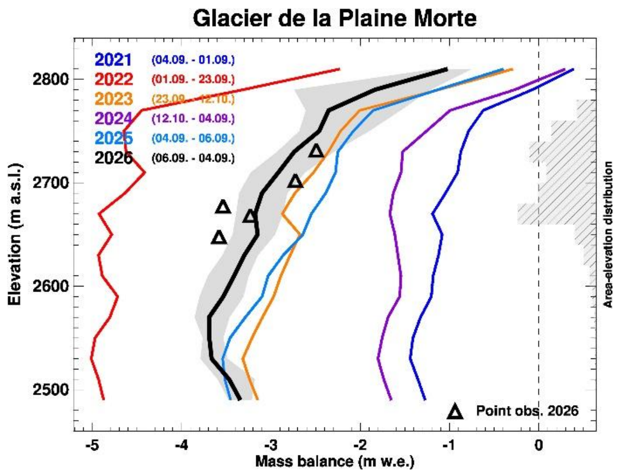


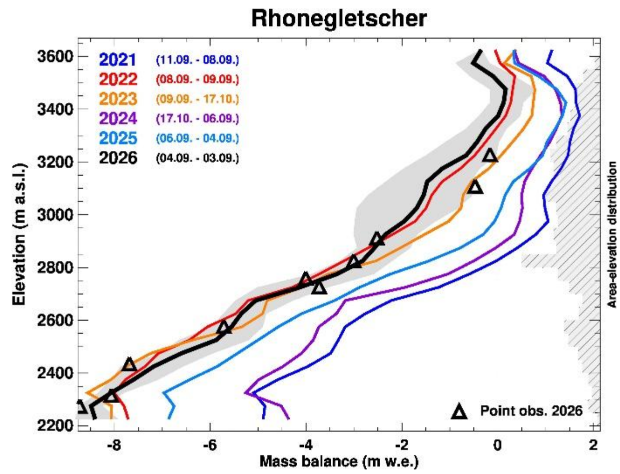


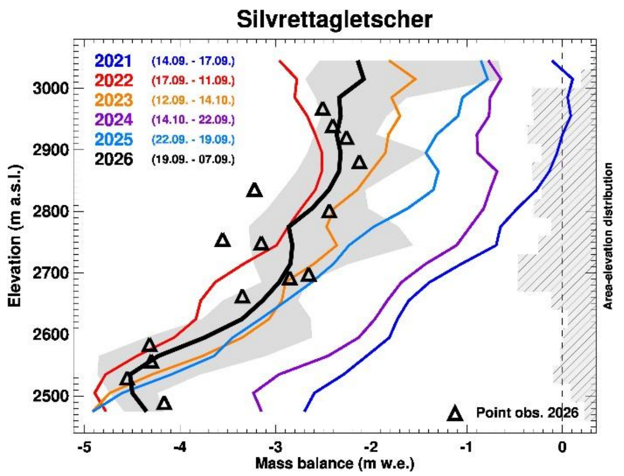


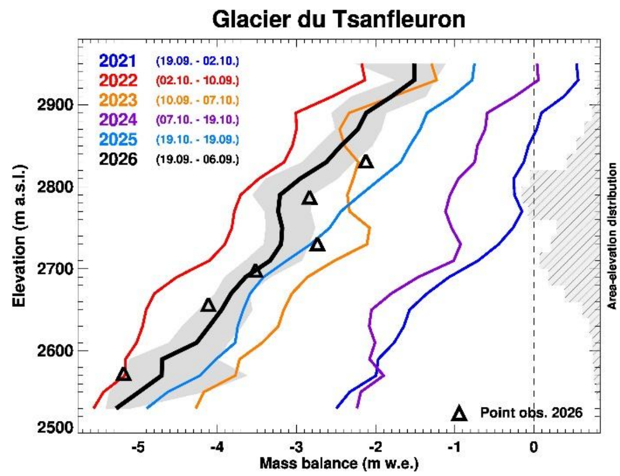

Vadret dal Murtel
2021 (07.09. - 06.09.)
2022 (06.09. - 15.10.)
2023 (15.10. - 10.09.)
2024 (10.09. - 15.10.)
2025 (15.10. - 05.10.)
2026 (05.10. - 07.09.)
Point measurements 2026
Elevation (m a.s.l.)
Mass balance (m w.e.)
Area-elevation distribution


Vadret Pers
2021 (08.09. - 06.09.)
2022 (06.09. - 12.09.)
2023 (12.09. - 30.09.)
2024 (30.09. - 28.09.)
2025 (28.09. - 29.09.)
2026 (29.09. - 08.09.)
Point obs. 2026
Elevation (m a.s.l.)
Mass balance (m w.e.)
Area-elevation distribution


Glacier de la Plaine Morte
2021 (04.09. - 01.09.)
2022 (01.09. - 23.09.)
2023 (23.09. - 12.10.)
2024 (12.10. - 04.09.)
2025 (04.09. - 06.09.)
2026 (06.09. - 04.09.)
Point obs. 2026
Elevation (m a.s.l.)
Mass balance (m w.e.)
Area-elevation distribution

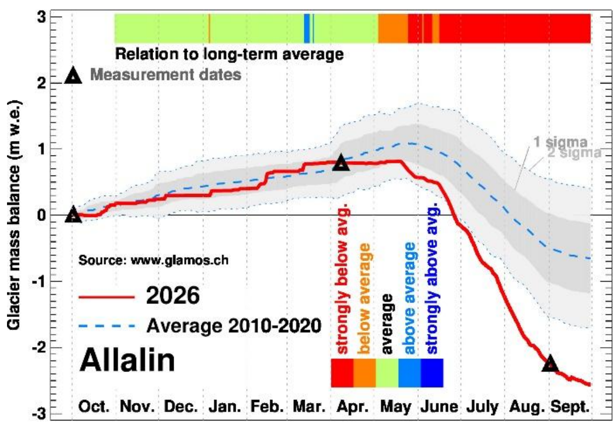

Rhonegletscher
2021 (11.09. - 08.09.)
2022 (08.09. - 09.09.)
2023 (09.09. - 17.10.)
2024 (17.10. - 06.09.)
2025 (06.09. - 04.09.)
2026 (04.09. - 03.09.)
Point obs. 2026
Elevation (m a.s.l.)
Mass balance (m w.e.)
Area-elevation distribution

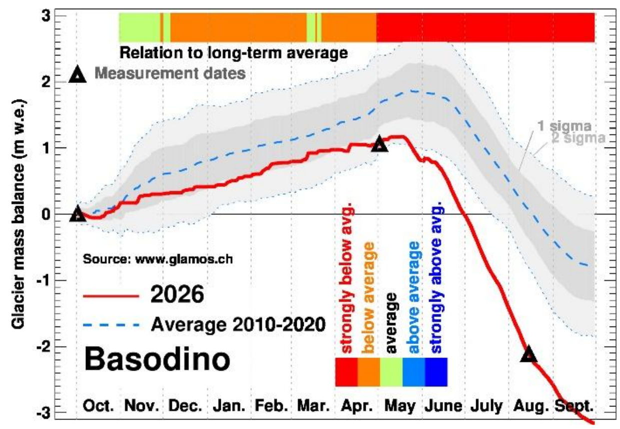

Silvrettagletscher
2021 (14.09. - 17.09.)
2022 (17.09. - 11.09.)
2023 (12.09. - 14.10.)
2024 (14.10. - 22.09.)
2025 (22.09. - 19.09.)
2026 (19.09. - 07.09.)
Point obs. 2026
Elevation (m a.s.l.)
Mass balance (m w.e.)
Area-elevation distribution

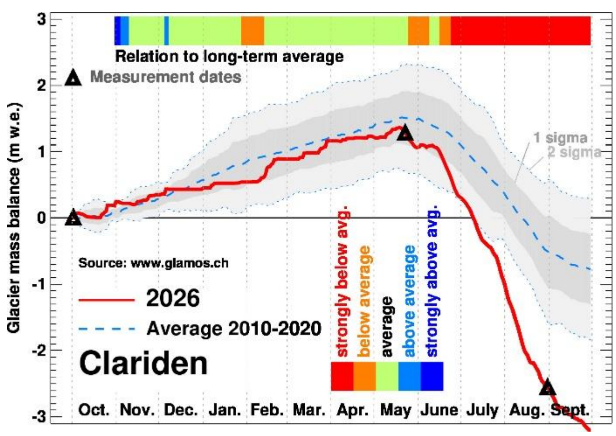

Glacier du Tsanfleuron
2021 (19.09. - 02.10.)
2022 (02.10. - 10.09.)
2023 (10.09. - 07.10.)
2024 (07.10. - 19.10.)
2025 (19.10. - 19.09.)
2026 (19.09. - 06.09.)
Point obs. 2026
Elevation (m a.s.l.)
Mass balance (m w.e.)
Area-elevation distribution

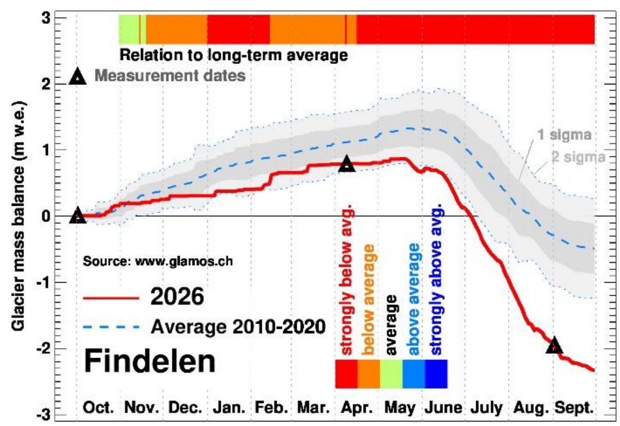
A.3 Temporal evolution of mass balance during the hydrological year 2025/2026

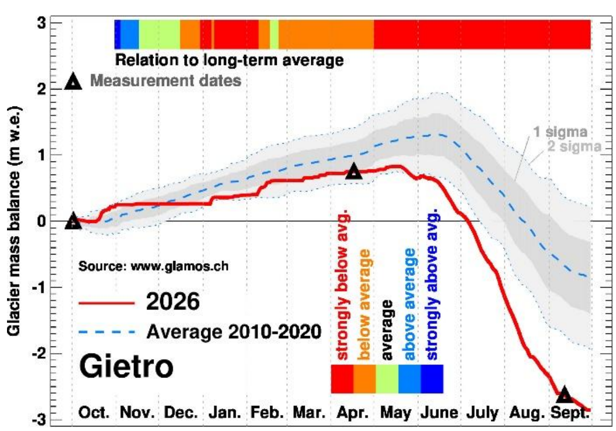
The figures below show the modelled daily cumulative mass balance during the hydrological year 2025/2026 in comparison to the average and the spread of the years 2010-2020. The measurement dates in late winter and late summer, by which the daily cumulative glacier-wide mass balance is constrained, is shown with black triangles. The top bar indicates periods throughout the year with below- or above-average mass balance. The glaciers are alphabetically ordered.

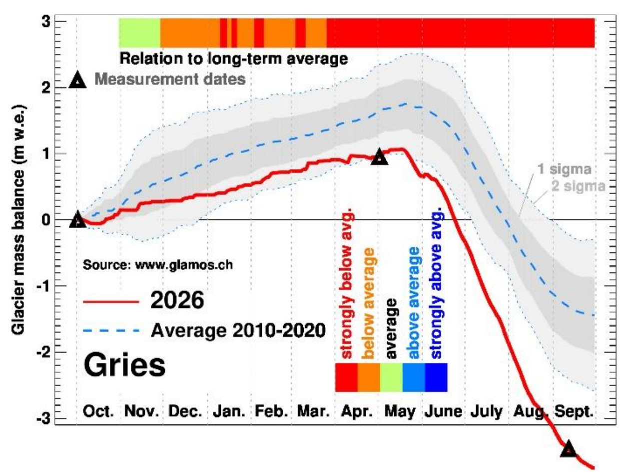


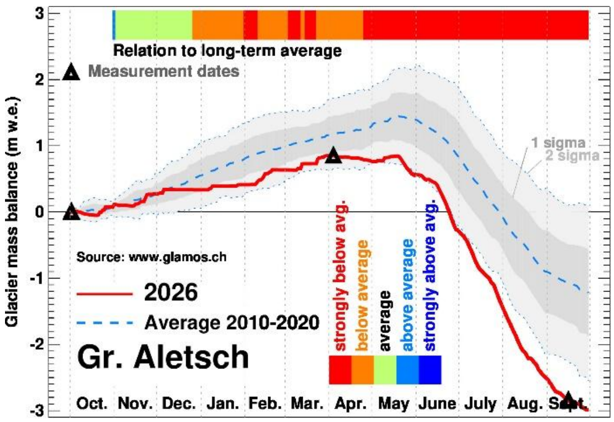


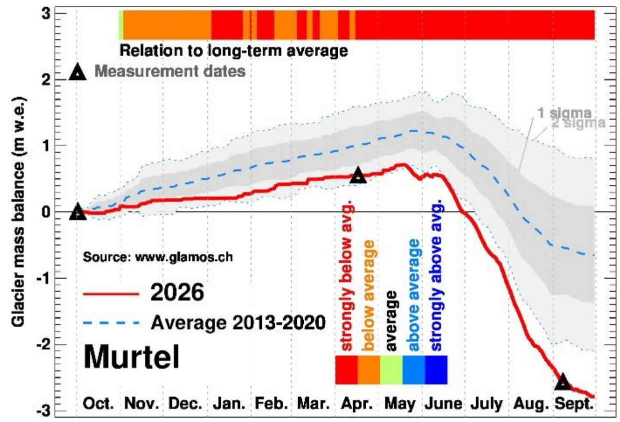


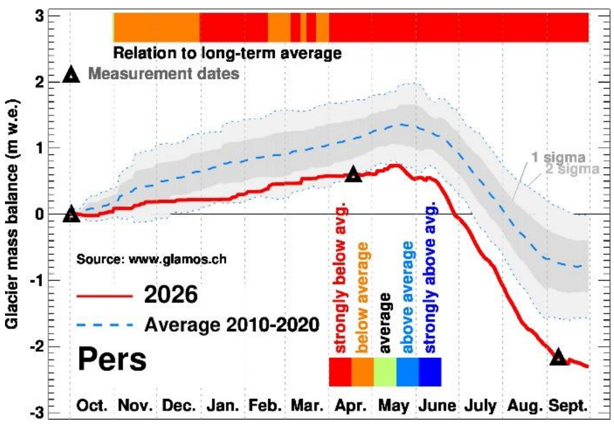


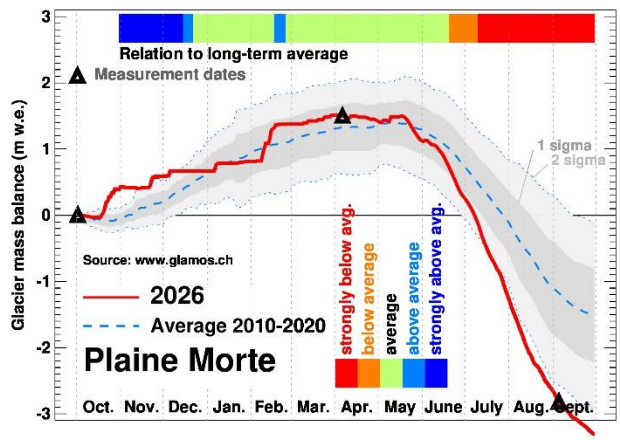


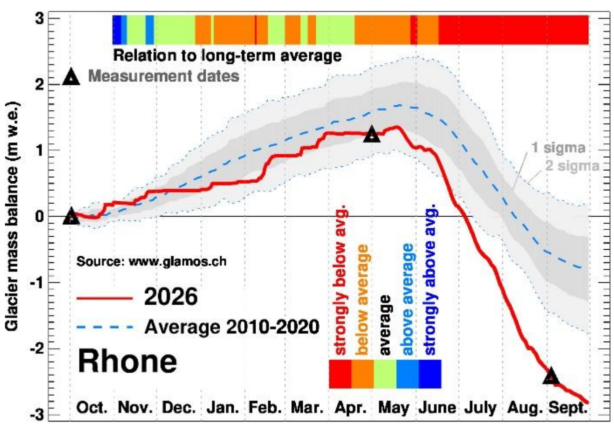


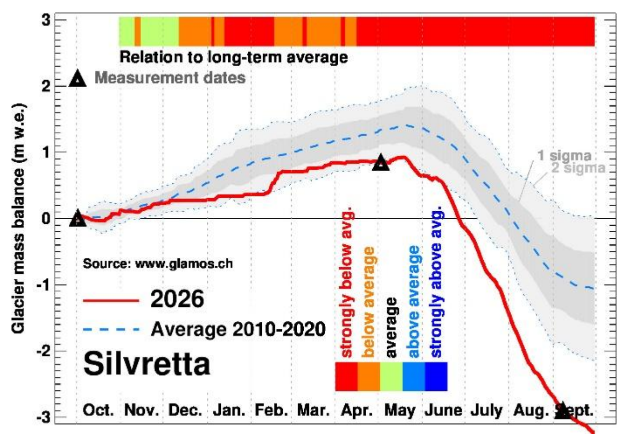

Relation to long-term average
Measurement dates
Glacier mass balance (m w.e.)
Source: www.glamos.ch
2026
Average 2010-2020
Gr. Aletsch
strongly below avg.
below average
average
above average
strongly above avg.
1 sigma
2 sigma
Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.

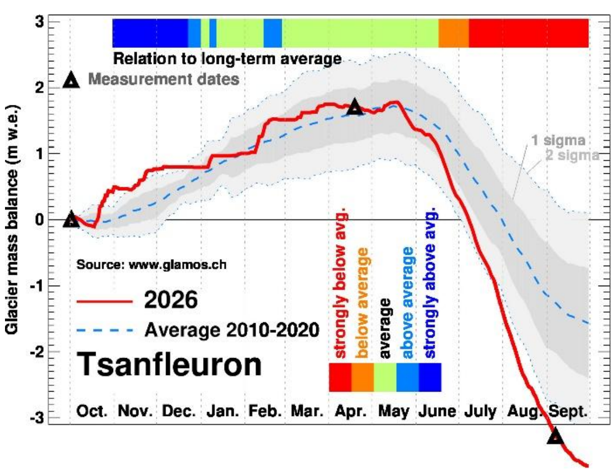

Relation to long-term average
Measurement dates
Glacier mass balance (m w.e.)
Source: www.glamos.ch
2026
Average 2013-2020
Murtel
strongly below avg.
below average
average
above average
strongly above avg.
1 sigma
2 sigma
Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.


Relation to long-term average
Measurement dates
Glacier mass balance (m w.e.)
Source: www.glamos.ch
2026
Average 2010-2020
Pers
strongly below avg.
below average
average
above average
strongly above avg.
1 sigma
2 sigma
Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.


Relation to long-term average
Measurement dates
Glacier mass balance (m w.e.)
Source: www.glamos.ch
2026
Average 2010-2020
Plaine Morte
strongly below avg.
below average
average
above average
strongly above avg.
1 sigma
2 sigma
Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.


Relation to long-term average
Measurement dates
Glacier mass balance (m w.e.)
Source: www.glamos.ch
2026
Average 2010-2020
Rhone
strongly below avg.
below average
average
above average
strongly above avg.
1 sigma
2 sigma
Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.

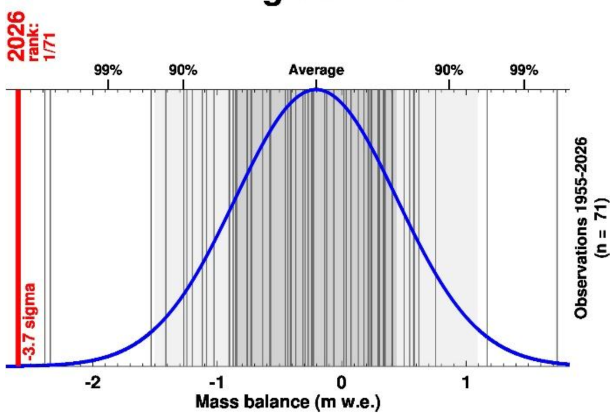

Relation to long-term average
Measurement dates
Glacier mass balance (m w.e.)
Source: www.glamos.ch
2026
Average 2010-2020
Silvretta
strongly below avg.
below average
average
above average
strongly above avg.
1 sigma
2 sigma
Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.


Relation to long-term average
Measurement dates
Glacier mass balance (m w.e.)
Source: www.glamos.ch
2026
Average 2010-2020
Tsanfleuron
strongly below avg.
below average
average
above average
strongly above avg.
1 sigma
2 sigma
Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.

A.4 Annual mass balance 2026 compared to all years since initiation of the measurements

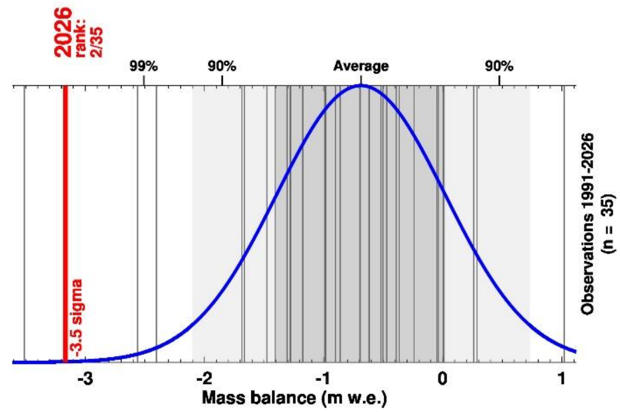
The figures below show the statistical distribution of all previously measured glacier-wide annual mass balances homogenized to the hydrological year (1 Oct - 30 Sept., vertical lines). The time of observations is stated on the right. Ranges corresponding to 1 (dark grey) and 2 (light grey) standard deviations are shown, as are the boundaries encompassing 90% and 99% of the statistical distribution (blue line, ticks). The year 2026 is indicated with the thick, red line and the rank of 2026 starting from the most negative annual mass balance is given. Note that the x-axis scale differs between the graphs.

Allalingletscher



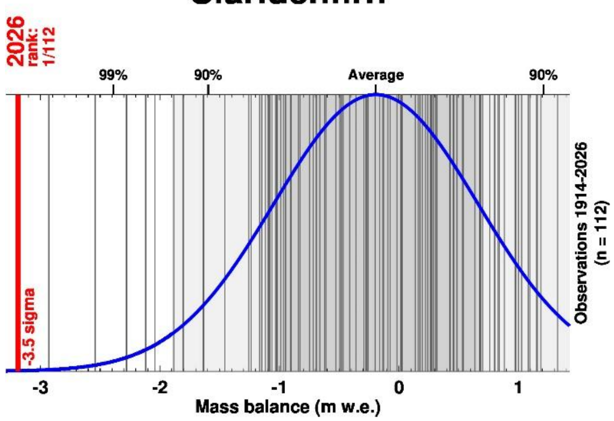
Glacier-wide annual mass balance (1.10.-30.9.)

Ghiacciaio del Basodino



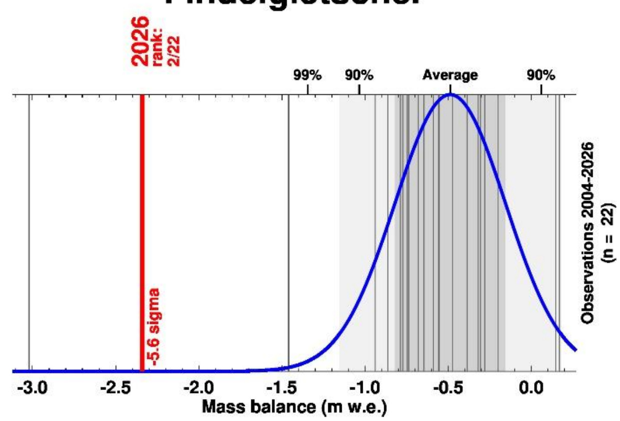
Glacier-wide annual mass balance (1.10.-30.9.)

Claridenfirn



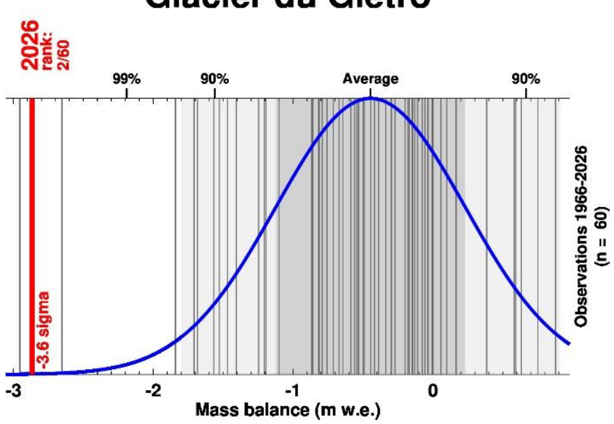
Glacier-wide annual mass balance (1.10.-30.9.)

Findelgletscher



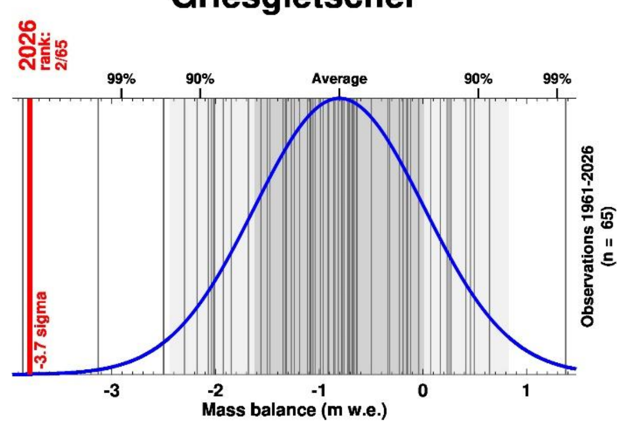
Glacier-wide annual mass balance (1.10.-30.9.)

Glacier du Gietro

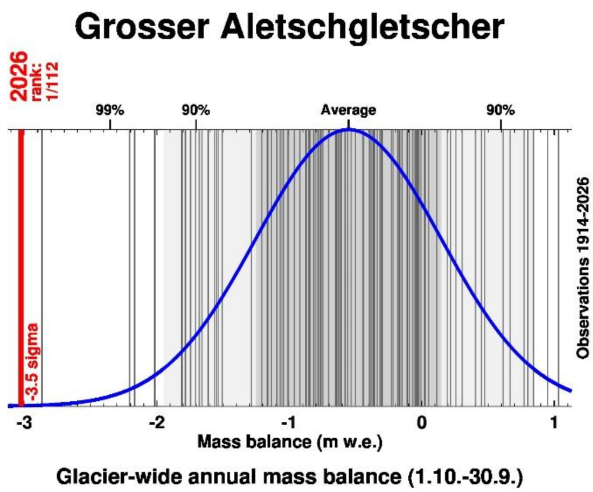


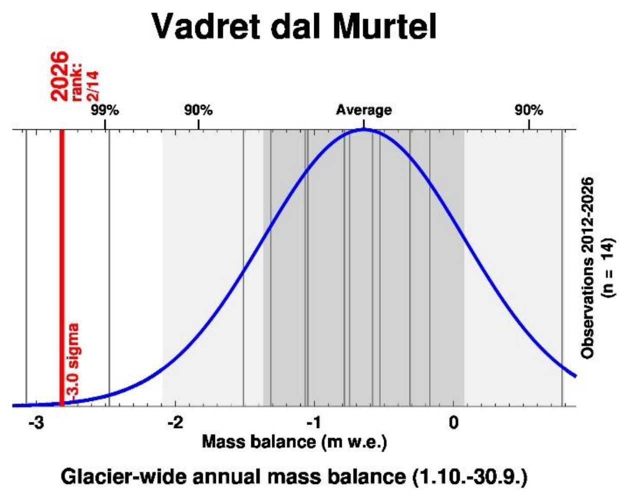
Glacier-wide annual mass balance (1.10.-30.9.)

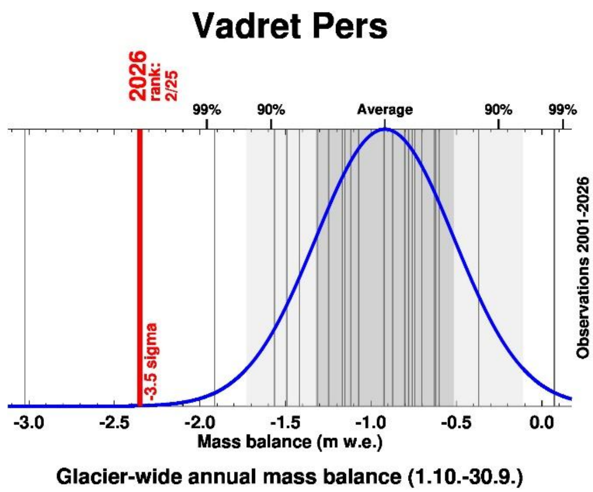
Griesgletscher

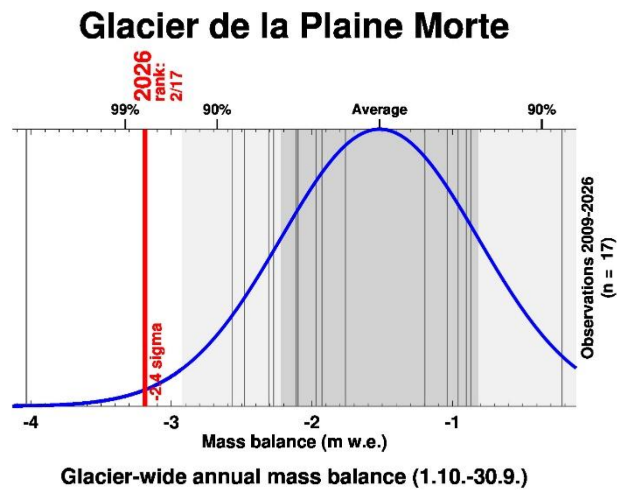


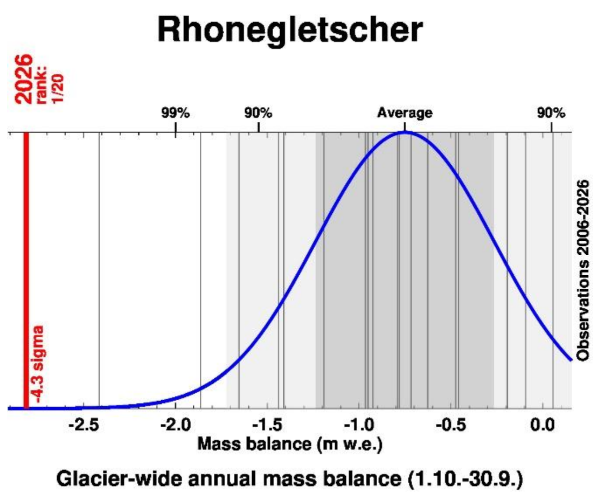
Glacier-wide annual mass balance (1.10.-30.9.)

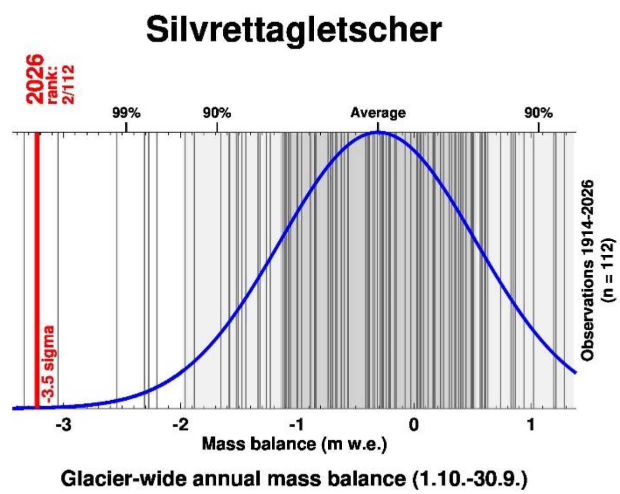

Grosser Aletschgletscher
2026
rank: 1/112
99%
90%
Average
90%
-3.5 sigma
Observations 1914-2026
(n = 112)
-3
-2
-1
0
1
Mass balance (m w.e.)
Glacier-wide annual mass balance (1.10.-30.9.)


Vadret dal Murtel
2026
rank: 2/14
99%
90%
Average
90%
-3.0 sigma
Observations 2012-2026
(n = 14)
-3
-2
-1
0
Mass balance (m w.e.)
Glacier-wide annual mass balance (1.10.-30.9.)


Vadret Pers
2026
rank: 2/25
99%
90%
Average
90%
99%
-3.5 sigma
Observations 2001-2026
(n = 25)
-3.0
-2.5
-2.0
-1.5
-1.0
-0.5
0.0
Mass balance (m w.e.)
Glacier-wide annual mass balance (1.10.-30.9.)


Glacier de la Plaine Morte
2026
rank: 2/17
99%
90%
Average
90%
-2.4 sigma
Observations 2009-2026
(n = 17)
-4
-3
-2
-1
Mass balance (m w.e.)
Glacier-wide annual mass balance (1.10.-30.9.)

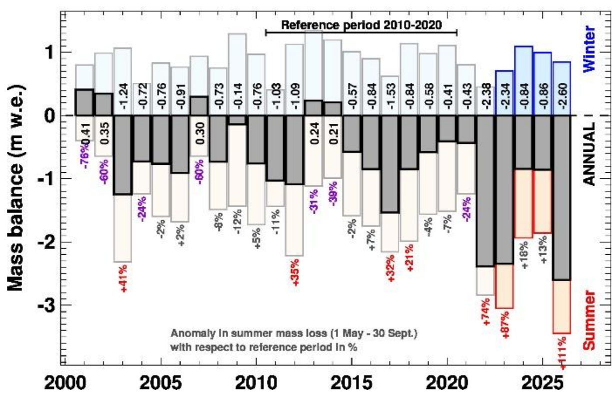

Rhonegletscher
2026
rank: 1/20
99%
90%
Average
90%
-4.3 sigma
Observations 2006-2026
(n = 20)
-2.5
-2.0
-1.5
-1.0
-0.5
0.0
Mass balance (m w.e.)
Glacier-wide annual mass balance (1.10.-30.9.)


Silvrettagletscher
2026
rank: 2/112
99%
90%
Average
90%
-3.5 sigma
Observations 1914-2026
(n = 112)
-3
-2
-1
0
1
Mass balance (m w.e.)
Glacier-wide annual mass balance (1.10.-30.9.)

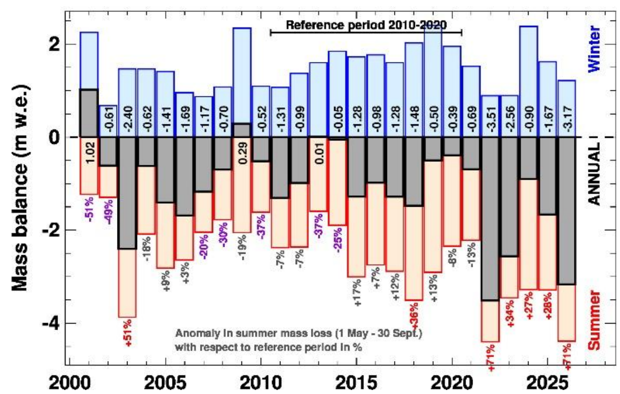
A.5 Seasonal mass balance time series (homogenized to fixed time periods)

The figures below show measured seasonal mass balance homogenized to fixed time periods for the **annual mass balance** (1 Oct. - 30 Sept., dark grey / numbers), **winter mass balance** (1 Oct. - 30 April, light blue), and **summer mass balance** (1 May – 30 Sept., light red). All years since 2000 are displayed. Light bars for a few glaciers show years where the seasonal mass balance components are not based on in situ measurements but modelling. Measurements for the annual mass balance were available throughout the entire period shown. Percentage numbers below the bars indicate the relative anomaly of summer mass balance relative to the period 2010-2020, coded with colours for years with strongly below-average melt (purple), average melt (grey) and strongly above-average melt (red). Note that the y-axis scale differs between the plots. The glaciers are alphabetically ordered.

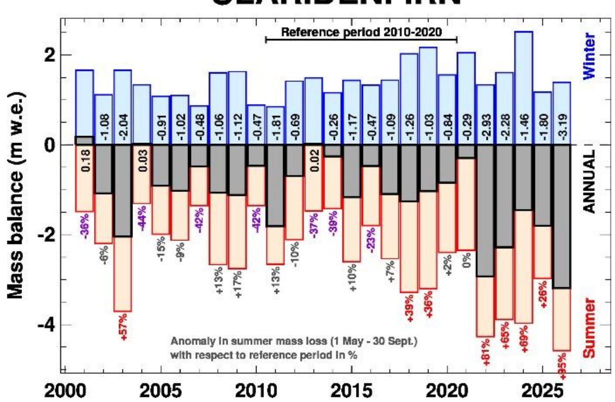
ALLALINGLETSCHER



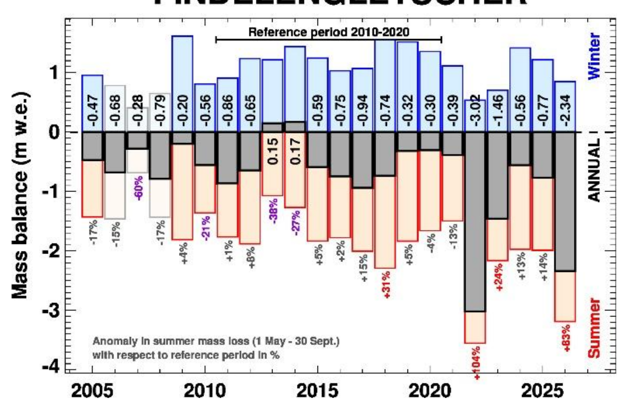
GHIACCIAIO DEL BASODINO



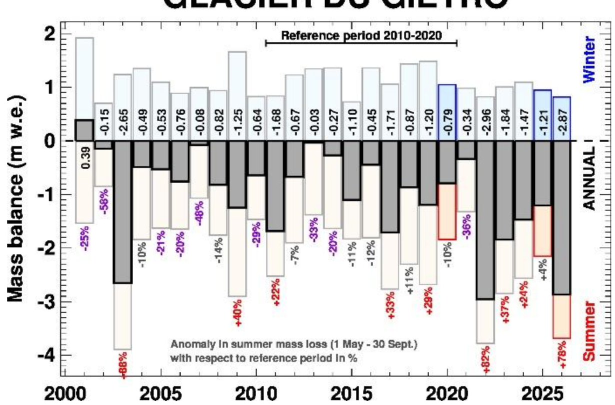
CLARIDENFIRN



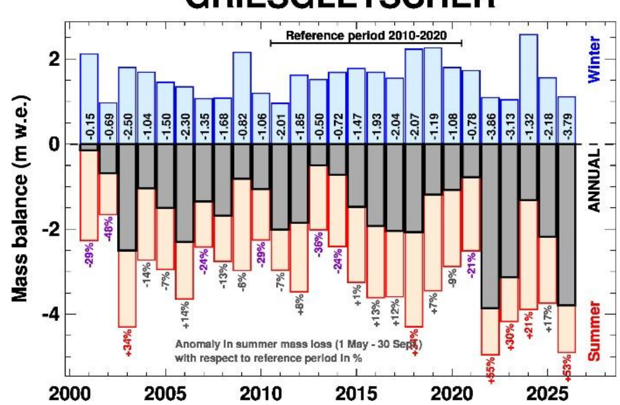
FINDELENGLETSCHER

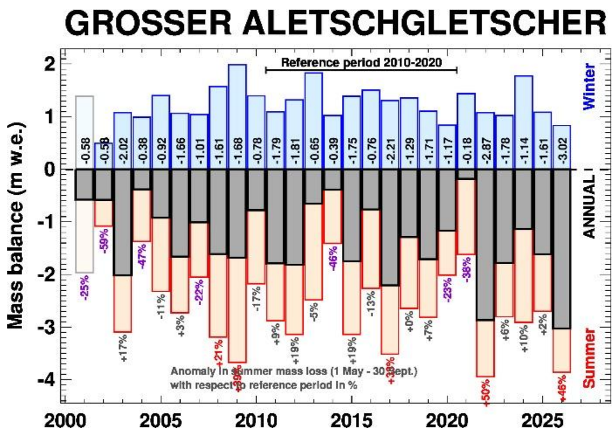


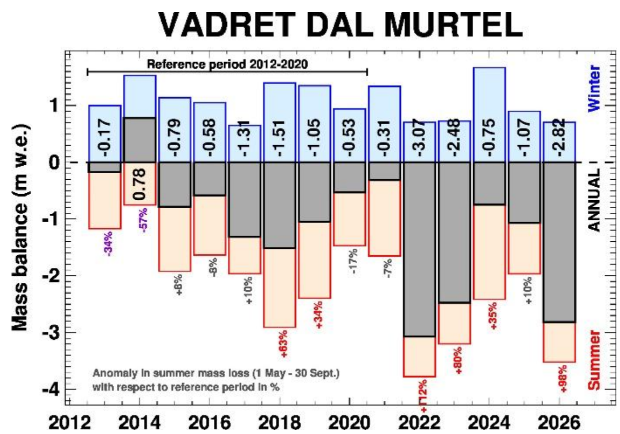
GLACIER DU GIETRO

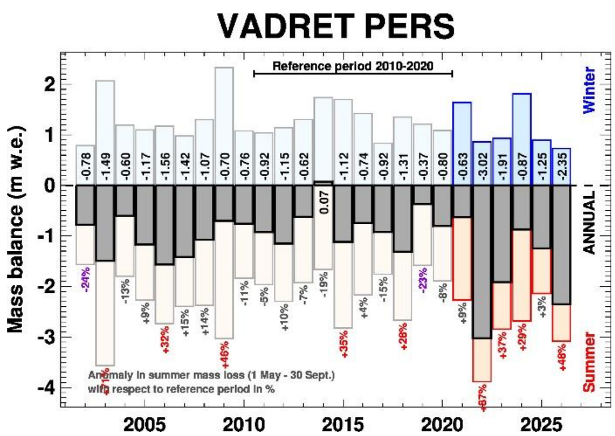


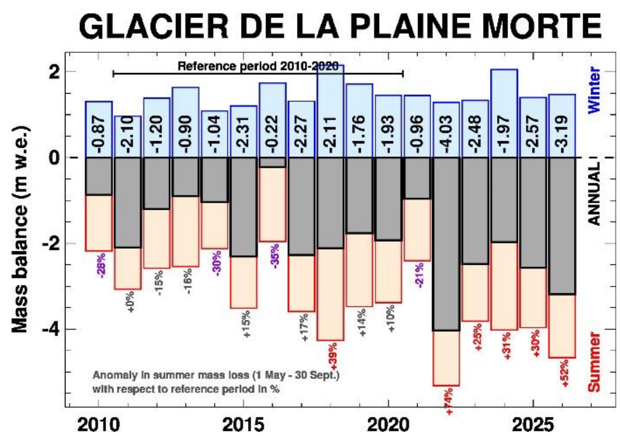
GRIESGLETSCHER

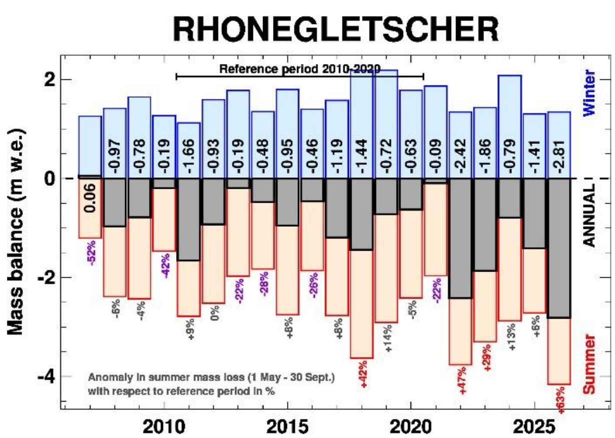


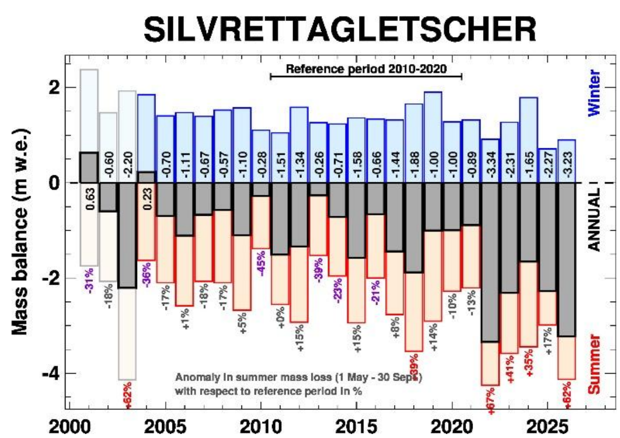

GROSSER ALETSCHGLETSCHER
Reference period 2010-2020
Mass balance (m w.e.)
Winter
ANNUAL
Summer
Anomaly in summer mass loss (1 May - 30 Sept.)
with respect to reference period in %

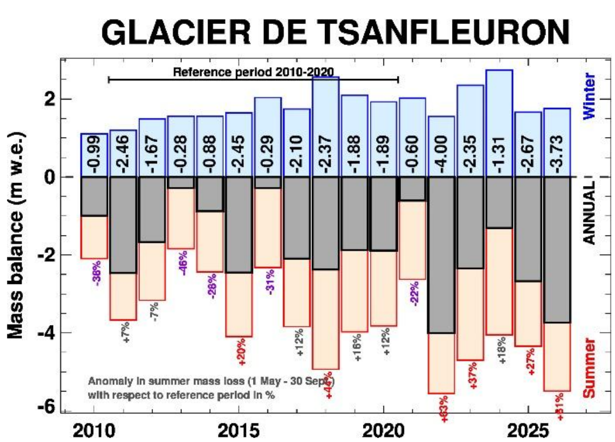

VADRET DAL MURTEL
Reference period 2012-2020
Mass balance (m w.e.)
Winter
ANNUAL
Summer
Anomaly in summer mass loss (1 May - 30 Sept.)
with respect to reference period in %


VADRET PERS
Reference period 2010-2020
Mass balance (m w.e.)
Winter
ANNUAL
Summer
Anomaly in summer mass loss (1 May - 30 Sept.)
with respect to reference period in %


GLACIER DE LA PLAINE MORTE
Reference period 2010-2020
Mass balance (m w.e.)
Winter
ANNUAL
Summer
Anomaly in summer mass loss (1 May - 30 Sept.)
with respect to reference period in %


RHONEGLETSCHER
Reference period 2010-2020
Mass balance (m w.e.)
Winter
ANNUAL
Summer
Anomaly in summer mass loss (1 May - 30 Sept.)
with respect to reference period in %


SILVRETTAGLETSCHER
Reference period 2010-2020
Mass balance (m w.e.)
Winter
ANNUAL
Summer
Anomaly in summer mass loss (1 May - 30 Sept.)
with respect to reference period in %


GLACIER DE TSANFLEURON
Reference period 2010-2020
Mass balance (m w.e.)
Winter
ANNUAL
Summer
Anomaly in summer mass loss (1 May - 30 Sept.)
with respect to reference period in %