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Glacier Inventories and Change in Glacier National Park

by

Melissa Carrie Brett

A thesis submitted in partial fulfillment of the
requirements for the degree of

Master of Science
in
Geology

Thesis Committee:
Andrew G. Fountain, Chair
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Portland State University
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Abstract

Glacier National Park, in northwestern Montana, is a unique and awe-inspiring national treasure that is often used by the media and public-at-large as a window into the effects of climate change. An updated inventory of glaciers and perennial snowfields (G&PS) in the Park, along with an assessment of their change over time, is essential to understanding the role that glaciers are playing in the environment of this Park. I compiled nine inventories between 1966 and 2015, to assess area changes of G&PS. Over that 49-year period, total area changed by nearly $-34 \pm 11\%$ between 1966 and 2015. Volume change, determined from changes in surface topography for nine glaciers, totaling 8.61 km² in area, was $+0.142 \pm 0.02$ km³, a specific volume loss of -16.3 ± 2.5 m. Extrapolating to all G&PS in the Park in 1966 yields a park-wide loss of -0.660 ± 0.099 km³. G&PS have been receding in the Park due to warming air temperatures rather than changes in precipitation, which has not changed significantly. Since 1900, air temperatures in Glacier National Park have warmed by $+1.3$ C°, compared to $+0.9$ C° globally. Spatially, G&PS at lower elevations and on steeper slopes lost relatively more area than other G&PS.

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1. Introduction

Alpine glaciers are sensitive to changes in climate, and are important indicators of global and regional climate change (Roe et al., 2017; Oerlemans, 2005). The loss of glaciers worldwide is of concern due to their contribution to global sea level rise (Meier et al., 2007; IPCC, 2014). On a regional scale, alpine glaciers are significant contributors to late-summer stream runoff when the previous year's winter snowpack has melted (Fountain and Walder, 1998; Moore, et al., 2009). The availability of water during the drier and warmer months from glaciated watersheds makes runoff more hydrologically stable than watersheds without glaciers (Fountain and Tangborn, 1985). The loss of these stores of water could have a significant impact on high alpine ecology, agriculture, and power supplies (Tangborn et al., 1990).

Perennial snow and ice in Glacier National Park (GNP) are of interest because of their contribution to stream runoff during dry months and drought conditions , and their change has the potential to affect aquatic habitat and the wildlife that depend on it (Clark and Fagre, 2017; Hall and Fagre, 2003). Therefore, a current and thorough inventory of glaciers and perennial snowfields (G&PS) in the Park will contribute to the assessment of global and regional glacier change, and are important to understanding the impact of climate change on ecosystem and hydrologic processes. This report provides a comprehensive digital inventory of glaciers and perennial snowfields, assesses area and volume change, and investigates the climate drivers forcing these changes.

2. Background / Previous Work

Glacier National Park is located in the northwest corner of Montana, along the northern Rocky Mountains (Figure 1). The geology is primarily Cretaceous sedimentary rock layers, overlain by Precambrian sedimentary rocks as a result of the Lewis Overthrust fault (Alt and Hyndman, 1986; Bekker, 2005). The continental divide runs northwest-southeast through the heart of the Park, splitting it into two distinct climates. The western side of the park has greater annual and seasonal precipitation, influenced by moisture from the Pacific Ocean, whereas the eastern side is drier and windier, influenced by intrusions of cold Arctic air (Finklin, 1986). In the last ~50 years, air temperature in the region has risen by ~1.3 C° (Pederson et al., 2010) compared to the global increase of 0.9 C° (IPCC, 2014). On average, temperatures in the western part of the Park are ~0.25 C° warmer than in the east. Annual snowpack depth across the Park averages 6m each winter, with the majority accumulating at the highest cirques and in the west (Klasner et al., 2002). The snow melts largely by early summer, and the late season streamflow is sustained by glacier melt (Fountain and Tangborn, 1985). The increasing frequency of drought conditions and rising average temperatures in the region has had an impact on glaciers at high elevation (Pederson et al., 2006).

Efforts to inventory glaciers globally have included many regions around the world, including the Himalayas (Mool et al., 2001), The Middle East and

Africa (Williams, Jr., and Ferringno, 2005), Europe (Fischer et al., 2014), and the American West (Fountain et al., 2017). The glacier inventories of the American West include region-wide inventories for eight states, but do not include Montana, or Glacier National Park. Early glacier inventories for the Park were limited to the largest glaciers, often named, and do not account for all G&PS, nor do those inventories span the temporal range of available imagery for the region.

The first glacier outlines in GNP were depicted on topographic maps created by the US Geological Survey (USGS) between 1900 and 1904, but they did not include all glaciers in the Park (Dightman and Beatty, 1952). The first comprehensive study of the Park's glaciers was completed between 1911 – 1913, and estimated about 90 glaciers ranging in size from 0.01 km² to 7.5 km² (Alden, 1914). Many of the named glaciers were measured at that time, and a few have since split into two or more distinct glaciers since then. For example, Grinnell and Salamander glaciers were considered a single glacier prior to 1941. Blackfoot Glacier was identified and named in 1911, but split into two glaciers by 1939, now named Blackfoot and Jackson (Dyson, 1941). Glacier monitoring efforts in the region began in the mid 1930's, and focused on the named glaciers. Initially, the termini of Grinnell, Sperry and Jackson glaciers were mapped to track recession and advance (Carrara and McGimsey, 1988). Results from these early studies showed a loss of nearly 50% of the area of the named glaciers between 1902 and 1950 (Dightman and Beatty, 1952). The most comprehensive glacier inventory for the Park is based on the 1:24,000 topographic maps

compiled by the USGS (Fountain et al, 2007, 2017). Digital outlines and topography from the National Elevation Dataset (~10m) digital elevation models, derived from the maps, defined all G&PS in the continental US. For Glacier National Park, the maps were compiled from aerial photography flown in 1963 (2% of the G&PS) and 1966 (98%). Although the inventory is comprised of imagery from 1963 and 1966, the vast majority are from 1966, so for simplicity I will refer to the inventory as 1966.

Figure 1: Map showing the location of Glacier National Park and the distribution of glaciers and perennial snowfields (dark gray) within the Park boundaries. Data was derived from the US Geological Survey 1:24,000 scale topographic maps (USGS, 1968; Fountain et al., 2017).

3. Methods

To update the extent of the G&PS, the 1966 inventory was used as a guide. Given the detail of the 1966 inventory and its error of inclusion (Fountain et al., 2017), it is unlikely that any G&PS were missed. The outline of each G&PS was superimposed on newer aerial photographs and satellite imagery, and checked for the presence of snow and ice. Aerial photographs and digital orthophotograph quadrangles (DOQ) were acquired from USGS Earth Explorer (<https://earthexplorer.usgs.gov>) and the National Agricultural Imagery Program (NAIP; <https://lta.cr.usgs.gov/NAIP>). Satellite images were downloaded from Digital Globe (<https://evwhs.digitalglobe.com>), or from the Polar Geospatial Center (<https://www.pgc.umn.edu>). G&PS outlines were digitized using ArcMap 10.4.1 (ESRI, 2017) and Google Earth Pro 6.2, at a scale of 1:2000, which is a compromise between feature detail and digitizing efficiency (Fountain, 2017). The timing of imagery acquisition was limited to mid-July through mid-September to best reveal the glacier perimeter by minimizing the potential for seasonal snow cover. Overall, the imagery was good. The type, source, and resolution are listed in Table 1.

Table 1. Year and imagery source for the nine inventories compiled in this study. DOQ means digital orthoquadrangle, USGS means United State Geological Survey, USDA NAIP is the United States Department of Agriculture National Aerial Imagery Program. WorldView I is satellite imagery made available by Digital Globe Inc. Resolution is the spatial resolution in meters.

Year	Type	Source	Resolution
1966	Aerial Photos	USGS	2.0 m
1979	Aerial Photos	USGS	2.0 m
1991	DOQ's	USDA NAIP	1.0 m
1995	DOQ's	USDA NAIP	1.0 m
1998	Aerial Photos	USGS	1.0 m
2003	DOQ's	USDA NAIP	1.0 m
2005	DOQ's	USDA NAIP	1.0 m
2013	DOQ's	USDA NAIP	1.0 m
2015	Satellite Image	WorldView I	0.5 m

I assume all features found in the 1966 inventory to have been perennial up to that time. This is a conservative assumption that probably includes some seasonal snow patches. To discriminate between seasonal and perennial features, I used the approach from DeVisser and Fountain (2015). First, any snow and ice feature in the imagery that was not found in the first inventory (1966) was considered to be seasonal, and not outlined. Second, any 1966 feature that was absent from the inventory immediately following was considered to have disappeared. This is a conservative assumption, implying that the cartographer mistook a seasonal snow patch for a perennial feature. Assessing “perennial” from one-time imagery is nearly impossible. Third, any 1966 feature found in the inventory following, it was considered perennial. If subsequently absent or episodically reappearing, it was considered disappeared (seasonal).

Perennial features were further partitioned into glaciers versus perennial snowfields. A glacier is defined as a perennial mass of snow and ice that moves (Cuffey et al, 2010). To visually determine ice movement, I inspected all G&PS

using the aerial and satellite imagery used to digitize their outlines. The presence of crevasses was sufficient evidence to indicate ice movement (Figure 2). I also used a shear stress threshold (Basagic and Fountain 2011, Fountain et al 2017). Only the 1966 inventory includes these calculations because it is the only year where a digital elevation model (DEM) exists to extract topographic values for the entire dataset. Nominally, glacier movement occurs when its basal shear stress exceeds the critical shear stress of ice, $\sim 10^5$ Pa (Cuffey and Paterson, 2010). The basal shear stress is given by

$$\tau_b = \rho_i g h \sin \gamma \quad (1)$$

where ρ_i is the density of ice (900 kg m^{-3}), g is the acceleration due to gravity (9.81 m s^{-2}), h is the thickness of the ice (m), and γ is the slope of the ice surface (radians). A density of ice less than the theoretical maximum is used to account for air bubbles in the ice. Ice thicknesses of the G&PS are unknown, but can be estimated. A scaling relation exists between glacier area and volume (Chen & Ohmura, 1990; Bahr & Meier 1997),

$$V = \alpha A^\beta \quad (2)$$

where, V is glacier volume, α and β are constants, and A is the glacier area.

Dividing equation (2) by the area, A yields

$$\langle h \rangle = \alpha A^{\beta-1} \quad (3)$$

where $\langle h \rangle$ is the average glacier thickness. To compensate for an average value of thickness, which is an underestimate for some places on the glacier and therefore underestimates shear stress. I used the maximum slope within each

features outline. The constants have been derived empirically (Chen and Ohmura, 1990, Driedger and Kennard, 1984) and theoretically (Bahr & Meier, 1997). I used the subset of empirical constants from Chen & Ohmura (1990) “Cascade & others” (α of 30.835 and β of 1.405), and the “Cascade, small glaciers” (α of 21.346 and β of 1.145). These constants were used because they best fit other studies in the continental US (Basagic and Fountain, 2011; Fountain et al 2017; and Oschlager, 2015).

Figure 2. World View I satellite imagery (<https://evwhs.digitalglobe.com>) captured on 9/12/2015, showing evidence of ice movement in the form of crevasses.

To assess area change over time, the area of each individual G&PS in each inventory was compared across inventories. In addition to park-wide inventories, six of the largest glaciers are examined separately because they have been studied extensively in the past and provide insight on long-term changes. These glacier outlines were reconstructed from historic maps, ground-based photographs, and geomorphological evidence (Key et al., 2002). The earliest outlines date to the Little Ice Age (LIA) and are based on mapped

moraines. Although Key et al (2002) tagged the LIA outlines as 1850, it is probably more accurate to say that they formed between 1840 and 1860 (Carrara, 1981).

Uncertainty

Uncertainty is introduced when defining the boundary of the G&PS, and are based on the georeferencing, digitizing, and interpretation uncertainty (DeBeer and Sharp, 2007, Fountain, 2017). The area uncertainty U is calculated as the root sum of squares of digitizing (D_u), interpretation (I_u), and positional (P_u) uncertainties (DeVisser and Fountain, 2015),

$$U = \sqrt{D_u^2 + I_u^2 + P_u^2} \quad (4)$$

D_u is the uncertainty introduced by the difference, typically small, between where the outline is drawn, and the true boundary under ideal conditions. Following Hoffman et al (2007) who adopted Ghilani (2000), this uncertainty can be estimated from,

$$D_u = d_u \sqrt{2A} \quad (5)$$

where, d_u is the linear distance between the digitized outline and the true edge of a feature and A is the area of the feature. To determine d_u , I measured the distance between the digitized outline at normal digitizing scale (1:2000) and at 1:500; for 10 locations around each of 30 G&PS, for every year of imagery. This method produced 300 sample points per year from which an average value for

d_u was calculated for that year. This approach indirectly addresses variation in imagery quality.

Interpretation uncertainty is caused by skewed imagery, shadow, rock debris, or snow cover. The true boundary of the feature is somewhere between the minimum and maximum boundaries that cover the obscured area, which defines the range of interpretation uncertainty. Digitizing each feature multiple times is inefficient; to accelerate this process, every feature in every year was visually classified into one of three uncertainty categories, as either “high”, “medium”, or “low” (Table A1). To quantify these uncertainties, the maximum and minimum outlines were digitized for a total sample of 60 G&PS (20 within each category) from each year of imagery. One half of the difference was taken to be the uncertainty. Assessment of G&PS boundaries occasionally relied on imagery from adjacent inventories. This was of particular help with perennial snow patches where defining the boundary between new and old snow was vague. Also, because vertical imagery flattens terrain, Google Earth was occasionally used in oblique view to provide a more three-dimensional perspective of the terrain G&PS perimeter. G&PS area from previously published reports include no uncertainty.

Positional uncertainty results from image orthorectification. Since the projection is consistent for each image, the area of each polygon is preserved and its exact position in space is unimportant; therefore, the positional uncertainty is considered to be zero.

Glacier volume change is important for understanding contributions to stream runoff and is estimated in two ways. First, the volume for all G&PS is estimated using the area-volume scaling relation (2). Second, for the nine glaciers the topography was remapped to define the details of topographic change. Aerial lidar was flown by University of Northern British Columbia, and I created a DEM for each glacier from the lidar point cloud. A cubic convolution interpolation was used to produce a cell size of ~10m. This large cell size was needed to match the DEM of the 1/3 arc second National Elevation Data produced by the US Geological Survey (<https://nationalmap.gov/elevation>). Volume change was estimated by differencing the USGS and 2015 DEMs, using the ArcMap 10.4 Raster Calculator (ESRI, 2017). Volume change is calculated by summing the elevation differences for all cells inside the 1966 glacier outlines, multiplied by the cell area. To estimate uncertainty, control zones were selected outside of the glacier on bedrock, free of snow and ice, where no change in elevation should occur. These control zones were identified using 2015 World View imagery (Digital Globe, Inc). Uncertainty estimates were partitioned according to slope because small horizontal offsets in steeper terrain yield larger vertical error (Oschlager 2015). Slope bins were divided into 10-degree intervals from 0° to 90°. The total volume change in each slope bin is described by,

$$\Delta V_j = A \sum_{i=1}^n \Delta Z_{ij}, \quad (6)$$

$$\Delta V = \sum_{j=1}^m \Delta V_j \quad (7)$$

where ΔV is the total volume change (m^3) within each slope bin j , n is the number of cells within each slope, A is the area of a cell (m^2), m is the number of slope bins, and ΔZ is the difference in elevation of each cell i (m), within the slope bins. The uncertainty of each slope bin of the bedrock was applied to the same slope bin of the glacier, yielding a slope-weighted uncertainty.

The uncertainty of the elevation differences, U , is calculated as the ratio of the root mean square error (RMSE) of the control zones to the RMSE of the glacier elevation differences, yielding a fractional uncertainty, F . The total uncertainty for each bin was calculated using,

$$U = \pm \frac{F * |\Delta V|}{2} \quad (8)$$

Climate and Topographic Data

To compare total G&PS area change with variations in topography and climate, I used the fractional area change of the G&PS to normalize the magnitude of change between G&PS. Gridded climate variables of mean, minimum, and maximum monthly temperature and precipitation were acquired from the Parameter Elevation Regression on Independent Slopes Model (PRISM); (Daly et al., 1994) at a scale of 800m. Using the monthly averages, data were partitioned into seasons based on mean minimum and maximum temperatures. Winter months include December, January and February, and are defined by mean winter minimum and maximum temperatures are $\leq 0^\circ \text{C}$; summer months are May, June, July, August, and September, when both mean

minimum and maximum temperatures are $> 0^{\circ}\text{C}$; spring (March and April) and fall (October and November) are months when mean minimum temperature is $\leq 0^{\circ}\text{C}$ and mean maximum temperatures are $> 0^{\circ}\text{C}$ above zero (Figure A1).

Topographic variables for each G&PS were derived from the NED DEM at a spatial resolution of 10m, and included mean elevation, latitude, longitude, aspect, and mean slope. Also, the G&PS are grouped according to which side of the Continental Divide they are found because the climate is different.

A Pearson product-moment and a non-parametric Spearman rank correlation were calculated to determine the correlation between the topographic and climate variables and the fractional area changes. The null hypothesis for these correlations is that there are no relationships between the dependent fractional area change or volume change variables, and the independent climate and topographic variables. These two correlations were used because of their different properties (Bonett et al., 2000). The Pearson test assumes a normal distribution and equal variances, and is sensitive to outliers because it is based on how close the correlation follows a linear distribution. It is useful for determining the strength of linear relationships between variables, and relies on data that are normally distributed. The Spearman test has relatively few assumptions and is not as sensitive to outliers because the test statistic is based on ranked values. However, because it ignores the magnitude of outliers, the results can be misleading. Using both methods is stronger when both agree, and

is also a way of finding data error. All significance is reported at the 95% confidence interval.

4. Results & Analysis

The 1966 inventory identified 604 G&PS with a total area of 40.52 ± 4.8 km², and an estimated volume of 0.263 ± 0.018 km³. The area uncertainty is 9% (Fountain & others, 2017). The 1966 imagery was good quality, based on about a dozen single-frame aerial photographs examined, with little seasonal snow cover obscuring the G&PS. Some mistakes in the G&PS outlines were found and corrected. The area of individual G&PS ranged from 0.001 km² to 1.75 km² (Blackfoot Glacier), with an average of 0.067 km² and a median of 0.017 km² (Figure 3). The elevation of the centroid of each G&PS range from 1750 m to 3155 m, and averaging 2255 m. The mean slopes ranged between 2.1° – 68.1° with an average of 30.6° and most features face north to northeast. Of the 604 G&PS, 167 (27%) were identified as glaciers by their basal shear stress, and cover a total area of 33.68 ± 3.03 km², with individuals averaging 0.20 km² and a median of 0.10 km², and an estimated volume of 0.219 ± 0.017 km³. The remaining 437 perennial snowfields (73%) had a total area of 6.89 ± 0.62 km², with an average of 0.016 km² a median of 0.011 km², and an estimated volume of 0.045 ± 0.004 km³. Because of limited available imagery, no visual identification of glaciers were made.

Figure 3. Topographic characteristics of the glaciers and perennial snowfields (G&PS) from 1966. The black bars correspond to the number of G&PS, and the gray bars represent the area in km². A. The number of G&PS per area, where the inset represents all data smaller than 0.2 km². B. The number and area of G&PS as a function of slope. C. Aspect, where the radius represents the number of G&PS facing that direction, in increments of 5. D. The number and area of G&PS as a function of elevation. Bins are defined by their maximum elevation, area, or slope. For example, the slope bin 30 includes all slopes >20 and ≤30.

Inventories of G&PS were compiled for nine different years from 1966 to 2015, and include 1966, 1979, 1991, 1995, 1998, 2003, 2005, 2013 and 2015 (Table 2; Table A4). Only the 1966 and 2005 inventories were complete. The others were incomplete due to lack of photographic coverage or seasonal snow

obscuring the G&PS outlines. The 1979 inventory is the least complete, but contains 39 large glaciers, the largest in the Park.

Table 2. Number of all features in each inventory. G&PS is glaciers and perennial snowfields; Not perennial is the number of features that are no longer perennial in each inventory; No imagery is the number of G&PS for which no imagery was available.

	1966	1979	1991	1995	1998	2003	2005	2013	2015
G&PS	604	39	293	229	150	231	455	264	259
Area (km ²)	40.52	19.92	22.87	19.25	19.37	18.49	27.28	17.10	26.46
Not Perennial	0	0	69	56	44	130	149	112	121
No Imagery	0	565	242	319	410	243	0	228	224

The 2005 inventory consists of 455 G&PS, with a total area of 27.29 ± 2.46 km², an average of 0.06 km², a median of 0.01 km², and a total volume of 0.155 ± 0.012 km³. Over the ~40-year period since 1966 the total ice-covered area decreased by 12.26 ± 1.59 km² (-31% $\pm$ 13%), 149 (25%) G&PS totaling 1.70 ± 0.15 km², are no longer perennial, and the total volume decreased by -0.108 ± 0.008 km³. It should be noted that the difference in the number of G&PS between the 1966 and 2005 inventories is due to the assumption that all glacial features on the original topographic maps were G&PS, although identification is based on one-time imagery. The smallest perennial snowfields (<0.1 km²) showed the most variability in change over this time (Figure 4). Of the 455 G&PS remaining in 2005, 291 are perennial snowfields, with a total area of 3.22 ± 0.29 km², and 164 are glaciers, with a total area of 24.07 ± 2.17 km². Total glacier area has decreased by -28% and the perennial snowfield area has decreased by -46%.

Figure 4. Fractional area change for all G&PS between 1966 and 2005. Fractional area change is the area change divided by the original area.

To estimate the changes in total glacier area in the Park, the relative area change for G&PS in complete inventories (1966, 2005) was compared to values from partial inventories. For example, the area change between 1966 and 1991 for the 294 G&PS common to both inventories, was -13% ($-3.36 \pm 0.6 \text{ km}^2$). We assume that this relative loss applies to all G&PS in 1966, resulting in an estimated loss of -5.27 km^2 from $40.52 \pm 3.65 \text{ km}^2$, such that the estimated total G&PS area in 1991 is 35.25 km^2 . The same calculation is made, but using the 2005 inventory as a reference, resulting in a +21% difference, yielding a 1991 area of 33.01 km^2 . The average of the two estimates defines the total area for

1991, and half of their difference is the uncertainty, $34.13 \pm 1.12 \text{ km}^2$. This method was repeated across each partial inventory, assuming that all known areas represent the unknown areas (Table 3).

Table 3. Estimated total G&PS area for each inventory. The complete inventories of 1966 and 2005 are in bold.

Year	Estimated Area (km²)
1966	40.52 ± 3.65
1991	34.81 ± 1.12
1995	34.13 ± 1.26
1998	29.52 ± 1.69
2003	28.09 ± 0.55
2005	27.28 ± 2.46
2013	27.07 ± 0.89
2015	26.46 ± 1.09

To provide further detail on how the G&PS were changing over time, a set of 100 G&PS common to each inventory, except 1979, were examined (Table 4). To test whether they are representative of the total population of G&PS, the changes were compared to the population between 1966 and 2005. The 100 G&PS in 1966 represents 17% of the total population and 25% of the total area. In 2005, the 100 G&PS represents 22% of the total population and 25% of the area. The total change between 1966 and 2005 was $-33\% \pm 11\%$ (standard deviation), and the change for the 100 G&PS was $-32\% \pm 11\%$. A one-way analysis of variance (ANOVA) of the area distribution between the 100 G&PS and the area of all G&PS for 1966 and 2005 showed that they are not statistically different from either population in 1966 or 2005, and the changes reflect that of the populations. The distribution of G&PS areas also shifted toward smaller areas over time, becoming more skewed toward the smallest areas. (Figure 5).

Table 4. Area characteristics of 100 G&PS across all inventories. U% is the percent uncertainty for total area in each inventory.

Year	1966	1991	1995	1998	2003	2005	2013	2015
Mean	0.102	0.087	0.090	0.080	0.064	0.069	0.073	0.063
Median	0.034	0.030	0.033	0.027	0.014	0.021	0.027	0.017
Total Area	10.203	9.463	9.037	7.975	7.121	6.940	6.543	6.253
Uncertainty	0.918	1.392	0.994	0.558	0.514	0.625	1.029	0.438
U%	9%	16%	11%	7%	8%	9%	14%	7%

Figure 5. The distribution of glacier and perennial snowfield (G&PS) areas for the set of 100 G&PS across all inventories. The vertical axis is the number of G&PS, and the horizontal axis is the area in log scale. Bins are defined by their maximum area. For example, the slope bin 0.01 includes all areas >0 and ≤ 0.01 .

To examine area change over the longest span of time, a set of six glaciers has data from ~1850 to 2015, and includes Agassiz, Grinnell, Harrison, Sperry, Swiftcurrent, and Vulture (Figure 6). Data availability varies, but data exist for all in ~1850 and in all inventories from 1966 to 2015 (Table A2). The total area of these six glaciers in 1850 was ~14.48 km² and in 2015, 4.17 ± 0.29 km², a loss of -10.31 ± 0.72 km² ($-71\% \pm 7\%$; Figure 7). Area measurements made before the 1960's are based on ground observations and mapped moraines (Key et al., 2002), and no uncertainty is available (Table A3). To test whether they are representative of the total population of G&PS, the changes in the six glaciers in 1966 and 2005 were compared to the total population between 1966 and 2005, and the largest glaciers in 1966 and 2005 (≥ 0.1 km²). The area of these six glaciers was in 1966 was 5.88 ± 0.53 km², and 4.48 ± 0.40 km² in 2005, an area loss of -1.40 ± 0.15 km² ($-24\% \pm 11\%$). Over this same period the area of all G&PS changed from 40.52 ± 3.64 km² to 27.28 ± 2.46 km², a loss of $-33\% \pm 11\%$. The area of the largest glaciers (≥ 0.1 km²) changed by $-27\% \pm 11\%$. The six glaciers are indicative of the larger glaciers in the Park, but underestimate the change of all G&PS. Based on the ratio of fractional area change of the total G&PS to the six glaciers over the period 1966 to 2005, the estimated loss of all G&PS from ~1850 to 2015 is -87%, yielding a ~1850 area of 311.69 km², and a total area change of -290.32 ± 20.32 km² between ~1850 and 2015. Fitting a linear regression to the data over the entire time period suggests that if the rate of change over the entire time period (-0.06 km² yr⁻¹) continues

into the future, all glaciers will disappear by 2080. If the rate of change since 1979 is used ($-0.038 \text{ km}^2 \text{ yr}^{-1}$), all glaciers will disappear by 2125.

Figure 6. Map showing the location of the six glaciers that have ~1850 outlines. The black polygons are expanded to show location, and are not to scale.

Figure 7. Area change of six glaciers with long-term observations. The oldest area ~1850 (LIA), based on mapped moraines, and really represent a period between about 1840-1960. No uncertainty is available for data between ~1850 and 1960. Fractional area change is the measured area divided by the original area in ~1850.

Volume Change Results

The volume change between the 1966 and 2005 inventories was estimated by the area-volume scaling relation (2) using the two sets of parameters to define the range. Results show an area change of 12.26 ± 1.59 km² and a volume change of -0.176 ± 0.002 km³. The change of individual G&PS was not examined because of the large uncertainty, which is reduced by compensating errors when summed over a large population (Granshaw & Fountain, 2006). Detailed volume changes were measured on individual glaciers by comparing updated DEMs to those created using 1966 topographic maps. Of the nine glaciers surveyed by aerial lidar in 2015, six have complete coverage, and three have small areas missing from the survey, Harrison (90% coverage), Salamander (90%) and Jackson (70%). The area of the glacier that is missing from the lidar survey is excluded from the analysis. All surveyed glaciers lost volume from 1966 to 2015, with a total loss of -0.1424 ± 0.022 km³, and a specific loss of -16.3 ± 2.5 m (Table 5). Grinnell Glacier lost the most, a specific volume loss of -34.11 ± 2.46 m and Swiftcurrent lost the least, -4.24 ± 1.66 m. Uncertainty increased nonlinearly with slope, consistent with other studies (Ohlschlager, 2015), ranging from ± 4 m to ± 6 m for slopes 0° - 30°, and ± 30 m to ± 40 m for slopes 70° - 90°. Fortunately, the glacier area within each slope bin decreases with increasing slope, such that uncertainty of high slopes make little contribution to overall elevation uncertainty of the glacier. The highest uncertainties are found at Swiftcurrent (39%) and Agassiz (29%) glaciers,

because they have a larger proportion of area at steeper slopes than the other glaciers. Grinnell and Sperry glaciers have the lowest uncertainties, at 7% and 10%, and the greatest relative area at low slopes. Sperry glacier lost most of its elevation near the terminus and at the lowest slopes (Figure 8). The other glaciers surveyed show similar elevation change, with the greatest loss concentrated near the terminus and at low slopes.

Extrapolating the specific volume loss from surface differences, to all G&PS in 1966, indicates about $0.660 \pm 0.099 \text{ km}^3$ of ice was lost by 2015. To test the predictive capability of the area-volume scaling, estimates of volume change of individual glaciers was compared to topographic estimates (Table 5). Results show that the two methods have results that differ by ~8% overall, with the area-volume scaling method typically overestimating volume change for each glacier. Topographic estimates show a specific volume change of -16.3 m, the area-volume scaling method, -6.49 m. Overall, the results produce similar results, and are a good comparison for the surveyed glaciers in the Park.

Table 5. Volume change between 1966 and 2015 for all glaciers surveyed by lidar, compared to those estimated by the area-volume scaling relationship. DEM Vol means digital elevation model volume change, and represents the topographic method for estimating volume change. A/V Vol means area-volume volume change, using and the area-volume scaling method. For total, the volume calculations are summed, and the specific volume changes are averaged.

Glaciers	DEM Vol Change (km³)	DEM Specific Vol Change (m)	A/V Vol Change (km³)	A/V Specific Vol Change (m)
Agassiz	-0.0144 ± 0.0040	-9.30 ± 2.66	-0.0140 ± 0.0011	-9.05 ± 0.72
Blackfoot	-0.0169 ± 0.0050	-9.77 ± 2.66	-0.0057 ± 0.0004	-3.27 ± 0.26
Chaney	-0.0127 ± 0.0020	-24.00 ± 2.93	-0.0038 ± 0.0003	-7.25 ± 0.58
Grinnell	-0.0339 ± 0.0020	-34.11 ± 2.46	-0.0102 ± 0.0008	-10.22 ± 0.82
Harrison	-0.0185 ± 0.0040	-14.66 ± 2.87	0.0021 ± 0.0002	-3.44 ± 0.28
Jackson	-0.0131 ± 0.0030	-14.81 ± 2.91	0.0016 ± 0.0001	-10.93 ± 0.87
Salamander	-0.0028 ± 0.0001	-13.95 ± 2.04	-0.0004 ± 0.0000	-5.23 ± 0.42
Sperry	-0.0291 ± 0.0030	-22.92 ± 2.21	-0.0114 ± 0.0009	-9.01 ± 0.72
Swiftcurrent	-0.0007 ± 0.0001	-4.24 ± 1.66	0.0000 ± 0.0000	-0.05 ± 0.00
TOTAL	-0.1420 ± 0.0200	-16.32 ± 2.50	-0.0419 ± 0.0034	-6.49 ± 0.52

Figure 8. Elevation change of Sperry Glacier. On the left is the 2015 WorldView Satellite image captured on 9/12/15 (Digital Globe). On the right, the base hillshade is created from the 2015 LiDAR. The solid black line is the boundary of the glacier in 1966. The dashed black line is the boundary in 2015.

Climate and Topographic Results

To compare total G&PS area change with variations in topography and climate, fractional area change between 1966 and 2015 was used as the dependent variable in a statistical correlation analysis, which considered topographic and spatial climate values as independent variables. The number of G&PS is limited to the 259 that are common to both inventories. Climate variables were extracted for each G&PS centroid. Given the 800 m cell size of the PRISM climate model and the proximity of neighboring G&PS, many have the

same climate values. They include mean, minimum, and maximum seasonal and annual air temperatures and precipitation. Topographic variables include latitude, longitude, centroid elevation, slope, and aspect. The results show that often, but not always, both the Pearson and Spearman have significant correlations for the same independent variable. Where they do not, we presume, it is the influence of outliers. For all G&PS, latitude, longitude, and mean elevation are the only variables with significant correlations, caused by the high correlations with the changing G&PS west of the continental divide.

The negative correlation with latitude suggests more area loss for G&PS further north, and the positive correlation with longitude suggests more area loss for G&PS to the west. The snowfields are more sensitive to change with latitude than glaciers, whereas both G&PS are influenced to some degree by longitude. All G&PS are significantly and positively correlated with elevation, with less loss at higher elevations. Slope is significantly positively correlated with glacier change across the entire Park. This suggests steeper glaciers retreat less than glaciers on lower slopes.

Seasonal temperatures are only significantly correlated with perennial snowfield change on the west side of the divide. Precipitation shows no significant correlations. Generally, the G&PS are more sensitive to topographic and climatic variables on the west side relative to the east side, and the G&PS have lost slightly more on the west side, $-42 \pm 27\%$ compared to the east side $-40 \pm 24\%$, respectively. Average annual temperatures are slightly warmer on the

west side than on the east side, 1.53 ± 7.85 °C; 1.25 ± 7.90 °C, respectively.

Summer and winter average temperatures are also warmer in the west than in the east as well, 9.39 ± 6.15 °C; 9.15 ± 6.10 °C, respectively for summer, and -6.41 ± 3.53 °C; -6.75 ± 3.53 °C, respectively for winter. The average G&PS elevation is about 130 m higher in the west and slightly less steep ($3^\circ \pm 2^\circ$) than in the east. Although the G&PS in the west are at higher elevation than the east, all G&PS in the west are subject to year-round warmer temperature than those in the east. These warmer air temperatures could be causing the G&PS to lose seasonal snow cover earlier in the season, exposing the ice to warmer air and solar radiation earlier and longer than in the east.

Perennial snowfields are generally more sensitive to topographic and climate variables than the glaciers. Perennial snowfields are typically smaller and shrink more than glaciers, averaging 0.02 ± 0.02 km² versus 0.26 ± 0.29 km², and $-44\% \pm 53\%$, versus $-36\% \pm 26\%$. Also, the average elevation of perennial snowfields is higher than the average elevation of the glaciers, 2262 ± 222 m; 2236 ± 207 m. The smaller perennial snowfields may be more sensitive to rising minimum average annual temperatures, which have increased by ~ 2.4 °C in the last ~ 50 years, because they are thinner and may shrink more (Figure 9).

Figure 9. Fractional area change and regional average summer temperature from 1966 to 2015

Table 6. Pearson and Spearman correlation statistics for fractional area change of glaciers and perennial snowfields (G&PS) relative to their topographic characteristics in 1966 and climate over the period 1966 to 2015. West and East are the fractional area change of G&PS on either side of the continental divide. “P” is the Pearson correlation coefficient, and “S” is the Spearman correlation coefficient. Significant correlations are in bold type.

Climate & Topographic Variables	Fractional Area Change					
	All G&PS		West		East	
	P	S	P	S	P	S
Latitude	-0.180	-0.171	-0.184	-0.184	-0.181	-0.177
Longitude	0.084	0.080	0.162	0.158	0.038	0.029
Northness	-0.005	-0.003	-0.002	0.003	-0.006	-0.004
Eastness	0.000	-0.005	0.102	0.085	-0.060	-0.068
Elevation	0.157	0.148	0.149	0.123	0.163	0.180
Slope	-0.078	-0.084	-0.054	-0.058	0.367	0.305
PPT_Fall	0.133	0.134	0.055	0.077	0.174	0.181
PPT_Winter	0.169	0.154	0.115	0.116	0.199	0.192
PPT_Spring	0.159	0.154	0.147	0.154	0.168	0.168
PPT_Summer	0.098	0.117	0.081	0.117	0.106	0.138
PPT_ANNUAL	0.152	0.148	0.104	0.121	0.177	0.183
TMIN_Fall	-0.021	0.005	-0.087	-0.060	0.054	0.037
TMIN_Winter	0.060	0.062	-0.066	-0.043	0.136	0.058
TMIN_Spring	-0.032	-0.008	-0.090	-0.062	0.099	0.013
TMIN_Summer	-0.023	0.013	-0.034	-0.004	0.065	0.037
TMIN_ANNUAL	-0.005	0.019	-0.071	-0.043	0.031	0.088
TMEAN_FALL	-0.075	-0.046	-0.089	-0.066	-0.068	-0.026
TMEAN_Winter	0.049	0.052	-0.078	-0.042	0.119	0.140
TMEAN_Spring	-0.053	-0.028	-0.092	-0.063	-0.032	0.007
TMEAN_Summer	-0.088	-0.067	-0.057	-0.038	-0.111	-0.083
TMEAN_ANNUAL	-0.046	-0.020	-0.080	-0.049	-0.029	0.011
TMAX_Fall	-0.119	-0.089	-0.087	-0.069	-0.141	-0.103
TMAX_Winter	0.034	0.040	-0.084	-0.037	0.099	0.116
TMAX_Spring	-0.068	-0.053	-0.091	-0.062	-0.057	-0.030
TMAX_Summer	-0.121	-0.116	-0.067	-0.071	-0.157	-0.147
TMAX_Annual	-0.080	-0.059	-0.084	-0.060	-0.080	-0.055

5. Discussion & Conclusions

Like most of the western U.S., (Fountain et al., 2017), the G&PS of Glacier National Park are small, averaging 0.098 km^2 in 1966. Since that time until 2015, G&PS have been shrinking and the smaller ones disappearing, consistent with a warming climate. Over the 49-year period from 1966 to 2015, 159 G&PS disappeared overall, and total area shrank by -35%, consistent with area changes observed elsewhere in the western U.S., including the Wind River Range in Wyoming, -30% between 1966 and 2015 (DeVisser & Fountain, 2015), and the Columbia (-5%) and Rocky Mountains (-15%) in Canada, between 1951 and 2001 (DeBeer et al., 2007). For a longer period, from the LIA (~1850) to 2000, the change for the six Park glaciers of -71% is also consistent, but larger than elsewhere in the western U.S., including the Sierra Nevada, LIA to 2004, -55% (Basagic & Fountain, 2011), the Colorado Front Range, LIA to 2001, -34% (Hoffman et al., 2007). The long-term changes in the Park are also comparable to, but larger than, global glacier changes observed in the Southern Alps of New Zealand, LIA to 1970's, -49%, and the European Alps, LIA to 1970's, -35% (Hoelzle et al. 2007).

An important feature in the methods was comparison of G&PS outlines over time. Large and abrupt changes, detected by this comparison, were often due to different assumptions and interpretations regarding the glacier boundary. The comparison over time forced a consistency in interpretation as well as insight of the perennial nature of the features.

Sperry Glacier has been studied extensively and is a benchmark glacier for the U. S. Geological Survey (Clark et al., 2017). The glacier area is measured by the USGS, and small differences between their results and this thesis is due to my inclusion of any small separated pieces of the retreated glacier that were found within the 1966 boundary, rather than just the area of the main body, as monitored by the USGS. Area changes from the USGS studies are comparable to this study. For example, the glacier (main body) in 2005 is $0.86 \pm 0.08 \text{ km}^2$ (Fagre, 2017), compared to my 2005 area, $0.89 \pm 0.06 \text{ km}^2$, which includes the remaining perennial ice patches. If you exclude the small ice bodies from my area estimate, the resulting area matches that of the USGS. Cumulative mass balance measurements show that the glacier lost -4.37 m of water equivalent (average vertical thinning) between 2005 and 2015 (Clark et al., 2017). This negative trend in mass balance is consistent with the negative trend of glacier area, -0.08 km^2 , over the decade.

Variations within the Park showed that G&PS at lower elevations lost more area than those at higher elevations. Also, smaller perennial snowfields, on average, lose more fractional area than the larger G&PS. However the variability in fractional area change is much greater for the smaller G&PS than it is for the larger G&PS, consistent with Granshaw and Fountain (2006) and DeBeer (2007). On the west side of the Park, air temperatures are $+0.2^\circ\text{C}$ to $+0.4^\circ\text{C}$ warmer than in the east, and G&PS in the west are experiencing slightly more loss than those on the east side, -42% versus -40%.

As expected from the area loss, the G&PS lost volume as well.

Extrapolating volume loss over the 1966 to 2015 period from the nine glaciers surveyed with lidar show a loss of about $-0.660 \pm 0.099 \text{ km}^3$ of ice. By comparison, volume loss based on area-volume scaling over the same 49-year period shows a total loss of $-0.263 \pm 0.02 \text{ km}^3$. Most of the volume lost occurred at lower elevations of the glaciers as the glaciers thinned, consistent with how glaciers thin and retreat (Cuffey and Patterson, 2010). The lidar survey suggests a specific volume loss at GNP averaged $-16.2 \pm 2.5 \text{ m}$, ($-6.49 \pm 0.52 \text{ m}$ for area-volume scaling), and similar to that at Mount Rainier -15 m from 1970 to 2008 (Sisson, 2010), and at Three Sisters, -11.3 m from 1957 to 2010, (Ohlschlager, 2015).

The G&PS in the Park face mostly north to northeast, and as they retreat to higher elevations they are becoming less exposed to warm air temperatures and are shaded from solar radiation. Smaller glaciers will tend to receive more of their snow accumulation from avalanching off steep terrain, such as found in GNP, and are therefore less sensitive to variations in direct snowfall (Kuhn, 1995). However, declining winter snowpack and rising summer temperatures will likely eventually cause the glaciers in the Park to disappear completely. If glaciers continue the same trend from ~1850 to 2015, and 1979 to 2015, they will disappear in about 2080 or 2125.

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Detailed Annual Data (Appendix A)

Table A1. Uncertainty of the digitized glaciers and perennial snowfields (G&PS) categorized by “high”, “medium”, and “low” uncertainties for each inventory, along with total uncertainty for each year. “U” is the uncertainty in km², “U%” is percent uncertainty, and number is the number of G&PS.

	Area (km ²)	U (km ²)	U %	Number
1979				
High	2.208	0.722	33%	10
Medium	11.228	2.316	21%	21
Low	6.480	0.813	13%	7
Total	19.917	3.851	19%	39
1991				
High	0.189	0.077	41%	16
Medium	11.767	2.572	22%	234
Low	10.930	0.984	9%	44
Total	22.886	3.633	16%	294
1995				
High	0.312	0.091	29%	12
Medium	11.759	1.176	10%	200
Low	7.235	0.289	4%	20
Total	19.306	1.556	11%	232
1998				
High	0.054	0.013	24%	11
Medium	2.540	0.254	9%	87
Low	16.763	0.838	5%	54
Total	19.356	1.105	7%	152
2003				
High	0.333	0.097	33%	22
Medium	4.931	0.641	12%	169
Low	13.222	0.793	6%	39
Total	18.487	1.531	8%	230
2005				
High	0.650	0.202	31%	37
Medium	8.089	0.971	12%	178
Low	18.541	1.297	7%	389
Total	27.281	2.455	9%	604
2013				
High	0.465	0.140	30%	36
Medium	8.273	0.745	9%	183
Low	10.465	0.419	4%	28
Total	19.202	1.303	14%	247
2015				
High	0.265	0.085	32%	13
Medium	9.475	0.794	16%	135
Low	10.991	0.659	5%	108
Total	20.730	1.538	7%	256

Appendix Table A2. Area (km²) data for the set of historical glaciers spanning between ~1850 and 2015. The number of significant digits are identical to those reported.

Year	Agassiz	Grinnell	Harrison	Sperry	Swiftcurrent	Vulture
1850	3.91	2.33	3.48	3.74	0.62	0.74
1879						
1887		2.21				
1900						
1901						
1911		1.89				
1913			2.66	3.29		
1920		1.75				
1926						
1927				2.03		
1937		1.28				
1938				1.65		
1945			2.37			
1946		1.16				
1950		1.09			0.24	0.50
1959				1.33		
1960	2.01	1.07	2.28	1.28	0.26	0.32
1966	1.586	1.018	1.913	1.281	0.245	0.361
1979	1.422	0.959	1.592	1.000	0.224	0.360
1991	1.266	0.818	1.381	0.972	0.228	0.356
1995	1.186	0.740	1.383	0.956	0.226	0.347
1998	1.174	0.716	1.382	0.934	0.189	0.352
2003	1.008	0.674	1.375	0.864	0.190	0.335
2005	1.011	0.616	1.360	0.886	0.178	0.331
2013	1.003	0.608	1.359	0.782	0.185	0.324
2015	0.995	0.564	1.346	0.804	0.172	0.294

Figure A1. Plot of monthly mean minimum and maximum air temperature, and monthly precipitation over Glacier National Park. The numbers correspond to the month of the year, for example, January is 1, February is 2, etc. Winter months include December, January and February, and are defined by mean winter minimum and maximum temperatures are $\leq 0^{\circ}\text{C}$; summer months are May, June, July, August, and September, when both mean minimum and maximum temperatures are $> 0^{\circ}\text{C}$; spring (March and April) and fall (October and November) are months when mean minimum temperature is $\leq 0^{\circ}\text{C}$ and mean maximum temperatures are $> 0^{\circ}\text{C}$ above zero

Table A3. Year and source for all outlines across varying inventories and studies. The historical information was gleaned from multiple sources and compiled by Key et al., 2002. The 1966 outlines were created by the USGS, and all other inventories were created at Portland State University by myself, and the Glacier Research team.

Year	Source
1850	Mapped Moraines, USGS
1887	Johnson, 1980
1901	Carrara & McGimsey, 1988
1911	Alden, 1914
1913	Alden, 1914
1927	Carrara & McGimsey, 1988
1937	Dyson & Gibson, 1939
1938	Dyson, 1940
1946	Dyson, 1948
1950	Baden, 1952
1959	Johnson, 1980
1960	Johnson, 1980
1966	USGS Aerial Photos
1979	USGS Aerial Photos
1991	NAIP DOQ's
1995	NAIP DOQ's
1998	USGS Aerial Photos
2003	NAIP DOQ's
2005	NAIP DOQ's
2013	NAIP DOQ's
2015	WorldView, Digital Globe

Inventory Data (Appendix B)

Table A4. Area and topographic characteristics from each inventory. Data includes Glacier Name, RECNO is the unique identifier (Fountain et al., 2007), G or PS defines if a feature is a glacier or perennial snowfield based on shear stress calculations, Area is the area of each feature in km², Uncert is the uncertainty of each feature in km², Mean Elevation, Slope, and Aspect are derived from the 1966 National Elevation Dataset digital elevation model and the 2015 LiDAR digital elevation model.

1966						
Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Herbst Glacier	1000	0.027	0.002	2793	33.4	28.9
	1001	0.006	0.001	2419	59.8	356.5
	1002	0.012	0.001	2467	62.2	13.6
	1003	0.012	0.001	2701	32.9	130.5
	1004	0.108	0.010	2375	12.9	103.2
	1005	0.068	0.006	1994	27.6	34.2
	1006	0.017	0.002	2096	27.5	327.1
	1007	0.013	0.001	2241	37.2	6.3
	1008	0.070	0.006	2288	53.8	1.1
	1009	0.004	0.000	2080	22.2	37.9
	1010	0.014	0.001	2051	32.0	38.7
	1011	0.025	0.002	2214	40.7	4.5
	1012	0.023	0.002	2404	30.0	37.1
	1013	0.131	0.012	2245	32.2	59.4
	1014	0.003	0.000	2188	21.9	68.5
	1015	0.019	0.002	2459	41.3	45.7
	1016	0.015	0.001	2559	38.0	41.9
	1017	0.051	0.005	2311	40.9	332.2
	1018	0.007	0.001	2199	55.2	292.6
	1019	0.013	0.001	2169	47.3	302.7
	1020	0.011	0.001	2322	41.6	192.4
	1021	0.153	0.014	1713	19.8	49.6
	1022	0.008	0.001	2191	26.0	342.5
	1023	0.081	0.007	2173	20.9	63.7
	1024	0.118	0.011	2293	25.3	352.5
	1025	0.048	0.004	1647	35.2	344.2
	1026	0.349	0.031	2443	42.2	356.2
	1027	0.028	0.003	2352	42.2	342.1
	1028	0.018	0.002	1905	45.9	15.6
Hudson Glacier	1029	0.087	0.008	2142	41.3	10.7
	1030	0.003	0.000	2001	42.5	353.5

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1031	0.022	0.002	2139	28.5	354.9
	1032	0.031	0.003	2455	2.5	264.5
	1033	0.011	0.001	2301	46.0	1.5
	1034	0.009	0.001	2084	47.1	21.4
	1035	0.060	0.005	1943	30.4	75.3
	1036	0.012	0.001	2346	47.8	12.9
	1037	0.002	0.000	2344	49.0	332.8
	1038	0.013	0.001	2137	45.1	64.2
	1039	0.032	0.003	2367	45.7	10.3
	1040	0.035	0.003	2076	38.2	80.2
Boulder Glacier	1041	0.231	0.021	2369	25.7	15.4
	1042	0.101	0.009	2470	21.5	318.4
	1043	0.021	0.002	2438	32.4	27.0
Harris Glacier	1044	0.153	0.014	1922	17.3	5.2
	1045	0.157	0.014	2257	29.0	48.3
	1046	0.007	0.001	2132	35.6	30.6
	1047	0.060	0.005	2364	26.9	62.5
	1048	0.008	0.001	2224	37.7	19.7
	1049	0.144	0.013	2172	9.9	44.5
	1050	0.058	0.005	2766	34.2	21.8
	1051	0.012	0.001	2400	31.6	81.7
	1052	0.078	0.007	2101	24.4	44.1
	1053	0.002	0.000	2071	34.7	313.6
	1054	0.010	0.001	2085	27.8	331.3
Agassiz Glacier	1055	1.586	0.143	2376	13.6	66.0
	1056	0.007	0.001	2139	57.3	343.0
	1057	0.004	0.000	2273	11.4	22.3
	1058	0.002	0.000	2133	68.1	347.8
	1059	0.020	0.002	2084	28.2	350.3
	1060	0.174	0.016	2127	31.8	32.5
	1061	0.011	0.001	2196	26.4	68.2
	1062	0.003	0.000	2416	50.1	16.0
	1063	0.006	0.001	1955	38.5	355.7
	1064	0.004	0.000	2518	47.3	26.9
	1065	0.014	0.001	2195	40.1	6.1
	1066	0.010	0.001	2246	39.8	336.6
	1067	0.018	0.002	2364	8.1	318.4
	1068	0.118	0.011	2172	32.0	336.5
	1069	0.034	0.003	2117	40.1	338.7

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Kintla Glacier	1070	0.004	0.000	2571	35.6	87.6
	1071	0.087	0.008	2109	24.0	43.3
	1072	1.274	0.115	2579	17.1	13.6
	1073	0.273	0.025	2548	27.5	328.5
Miche Waburn	1074	0.202	0.018	2208	31.0	12.1
	1075	0.006	0.001	2215	31.5	31.3
	1076	0.021	0.002	2304	49.2	14.5
	1077	0.037	0.003	2259	39.9	321.0
Thunderbird Glacier	1078	0.004	0.000	2415	9.2	0.5
	1079	0.058	0.005	2365	34.1	22.4
	1080	0.022	0.002	2324	17.3	34.3
	1081	0.124	0.011	2378	31.2	327.1
	1082	0.004	0.000	2507	30.0	10.8
	1083	0.010	0.001	2471	30.9	356.4
	1084	0.179	0.016	2643	31.8	56.5
	1085	0.065	0.006	2207	28.0	62.5
	1086	0.021	0.002	2669	35.3	97.7
	1087	0.013	0.001	2264	36.9	1.4
	1088	0.191	0.017	2120	18.3	13.4
	1089	0.133	0.012	2288	22.1	44.4
	1090	0.005	0.000	2430	43.7	91.1
	1091	0.082	0.007	2421	38.1	86.7
	1092	0.002	0.000	2564	61.5	78.6
	1093	0.029	0.003	2411	38.5	352.6
	1094	0.294	0.026	2263	24.3	20.2
	1095	0.037	0.003	2239	34.3	309.9
Dixon Glacier	1096	0.080	0.007	2334	23.0	327.9
	1097	0.069	0.006	1890	24.5	102.9
	1098	0.007	0.001	2053	38.8	350.0
	1099	0.012	0.001	2033	33.1	278.8
	1100	0.008	0.001	1987	43.3	297.7
	1101	0.018	0.002	2765	38.6	152.4
	1102	0.070	0.006	2022	41.4	354.2
	1103	0.004	0.000	1997	60.9	274.6
	1104	0.022	0.002	2875	47.8	95.6
	1105	0.009	0.001	2572	37.8	96.2
	1106	0.012	0.001	3109	50.8	110.6
	1107	0.004	0.000	2042	29.2	10.6
	1108	0.088	0.008	2133	32.0	128.1

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Whitecrow Glacier	1109	0.060	0.005	2030	25.9	24.0
	1110	0.198	0.018	2400	31.7	6.9
	1111	0.005	0.000	2328	40.3	161.9
	1112	0.007	0.001	2129	42.2	343.3
	1113	0.037	0.003	2270	36.3	18.8
	1114	0.016	0.001	2292	41.1	108.1
	1115	0.023	0.002	2073	33.9	106.7
	1116	0.005	0.000	1980	40.1	130.7
	1117	0.006	0.001	2477	47.6	41.2
	1118	0.242	0.022	2004	19.9	93.1
Baby Glacier	1119	0.012	0.001	2518	52.2	1.7
	1120	0.113	0.010	2067	20.5	59.9
	1121	0.008	0.001	2160	35.4	187.3
	1122	0.008	0.001	2136	26.9	159.1
	1123	0.018	0.002	2374	43.1	68.6
Weasel Collar Glacier	1124	0.004	0.000	2201	51.0	155.8
	1125	0.008	0.001	2267	35.7	135.6
	1126	0.558	0.050	2185	8.8	15.5
	1127	0.072	0.006	2296	20.8	346.7
	1128	0.035	0.003	2590	37.7	42.5
Carter Glaciers	1129	0.149	0.013	1790	25.1	1.8
	1130	0.023	0.002	2245	30.5	92.4
	1131	0.046	0.004	1899	32.6	354.4
	1132	0.274	0.025	2359	18.9	40.3
	1133	0.034	0.003	2270	27.3	109.2
Rainbow Glacier	1134	0.060	0.005	1970	26.2	342.3
	1135	0.006	0.001	2428	28.7	64.4
	1136	0.004	0.000	2664	34.6	175.4
	1137	0.008	0.001	2596	32.7	185.5
	1138	0.010	0.001	2614	27.4	331.5
	1139	0.010	0.001	2297	37.3	105.1
	1140	0.067	0.006	2512	26.6	164.6
	1141	1.213	0.109	2495	11.2	96.4
	1142	0.003	0.000	2489	36.3	176.7
	1143	0.046	0.004	2268	22.4	54.5
	1144	0.027	0.002	2238	28.1	85.7
	1145	0.004	0.000	2467	20.7	155.0
	1146	0.049	0.004	2479	37.2	38.5

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Carter Glaciers	1147	0.003	0.000	2362	43.9	32.8
	1148	0.072	0.006	2185	20.2	18.7
	1149	0.019	0.002	2198	34.2	16.6
	1150	0.335	0.030	2316	20.8	70.2
	1151	0.193	0.017	2198	17.7	94.7
	1152	0.021	0.002	2164	23.6	33.1
	1153	0.014	0.001	2059	42.5	12.7
	1154	0.028	0.003	2128	44.7	357.2
Old Sun Glacier	1155	0.077	0.007	2345	28.8	346.1
	1156	0.421	0.038	2673	16.8	97.3
	1157	0.050	0.004	2242	32.8	359.1
	1158	0.003	0.000	1931	25.8	88.4
	1159	0.003	0.000	2147	32.1	46.2
	1160	0.051	0.005	2221	30.1	102.3
	1161	0.002	0.000	2427	35.5	355.7
	1162	0.018	0.002	2272	38.2	166.3
Shepard Glacier	1163	0.006	0.001	2908	43.6	12.5
	1164	0.200	0.018	2330	33.4	68.5
	1165	0.004	0.000	2290	41.4	133.5
	1166	0.017	0.001	1986	34.7	232.7
	1167	0.013	0.001	2243	31.7	52.6
	1168	0.025	0.002	2217	4.4	8.9
	1169	0.005	0.000	2981	35.9	59.8
	1170	0.008	0.001	2249	14.6	74.0
	1171	0.009	0.001	2355	23.3	85.0
	1172	0.283	0.025	1738	25.4	56.9
	1173	0.004	0.000	2266	6.0	319.8
	1174	0.003	0.000	2265	9.0	41.3
	1175	0.005	0.000	2125	38.4	65.6
	1176	0.124	0.011	2333	40.3	354.9
	1177	0.002	0.000	2290	7.6	31.2
	1178	0.013	0.001	2314	14.8	34.0
Chaney Glacier	1179	0.006	0.000	2269	8.4	69.4
	1180	0.003	0.000	2311	16.6	116.9
	1181	0.003	0.000	2223	29.4	110.0
	1182	0.002	0.000	1991	30.6	67.7
	1183	0.016	0.001	2214	50.1	357.7
	1184	0.006	0.000	2192	34.6	36.0
	1185	0.535	0.048	2252	17.9	26.6

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Ipasha Glacier	1186	0.011	0.001	2046	35.2	25.1
	1187	0.003	0.000	2176	25.8	91.0
	1188	0.003	0.000	2049	54.1	356.5
	1189	0.015	0.001	2122	42.1	316.4
	1190	0.151	0.014	2149	29.0	57.6
	1191	0.003	0.000	2178	38.2	275.1
	1192	0.029	0.003	2071	40.6	7.3
	1193	0.024	0.002	2735	47.0	126.7
	1194	0.006	0.001	2103	38.8	18.3
	1195	0.320	0.029	2288	20.8	26.8
	1196	0.025	0.002	2038	30.3	30.0
	1197	0.007	0.001	2021	38.5	332.5
	1198	0.004	0.000	2013	26.6	332.7
	1199	0.087	0.008	2492	29.8	297.0
	1200	0.014	0.001	2111	45.9	354.7
Two Ocean Glacier	1201	0.432	0.039	2585	15.1	92.1
Ahern Glacier	1202	0.581	0.052	2489	12.0	85.2
	1203	0.015	0.001	2197	38.6	142.0
	1204	0.007	0.001	2684	43.3	103.1
	1205	0.005	0.000	2403	36.0	308.4
	1206	0.014	0.001	1983	21.7	131.8
	1207	0.027	0.002	2300	12.5	40.4
	1208	0.011	0.001	2410	31.7	306.8
	1209	0.171	0.015	2528	19.5	63.1
	1210	0.007	0.001	2666	35.0	72.8
	1211	0.002	0.000	2644	34.8	143.1
	1212	0.064	0.006	2267	25.0	68.3
	1213	0.018	0.002	2405	20.1	55.8
	1214	0.016	0.001	2485	17.5	206.6
	1215	0.006	0.001	2482	25.9	191.6
	1216	0.023	0.002	2644	31.0	125.4
	1217	0.006	0.001	2562	23.8	111.1
Vulture Glacier	1218	0.006	0.001	2526	25.7	195.5
	1219	0.028	0.002	2475	18.6	4.8
	1220	0.015	0.001	2512	9.7	172.9
	1221	0.010	0.001	2431	26.9	86.3
	1222	0.033	0.003	2502	22.7	186.4
	1223	0.003	0.000	1875	49.3	341.9
	1224	0.361	0.032	2565	32.0	81.9

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1225	0.008	0.001	2199	45.8	104.4
	1226	0.002	0.000	1952	54.5	24.0
	1227	0.133	0.012	1785	31.5	74.5
	1228	0.021	0.002	1971	44.0	6.8
	1229	0.033	0.003	2703	33.3	142.8
	1230	0.014	0.001	2214	26.7	61.6
	1231	0.047	0.004	1730	21.0	17.5
	1232	0.016	0.001	2059	15.5	93.0
	1233	0.014	0.001	2140	35.5	41.1
	1234	0.010	0.001	2519	42.3	133.1
	1235	0.003	0.000	1763	37.2	351.4
	1236	0.025	0.002	2269	30.2	142.9
	1237	0.046	0.004	2284	30.1	30.0
	1238	0.036	0.003	2089	48.5	340.0
	1239	0.019	0.002	1975	33.3	136.7
	1240	0.121	0.011	1878	9.7	78.0
	1241	0.007	0.001	1897	11.0	271.7
	1242	0.005	0.000	2191	19.4	19.0
	1243	0.008	0.001	2090	44.6	110.3
	1244	0.025	0.002	1881	26.7	318.5
	1245	0.003	0.000	1928	31.0	310.9
	1246	0.022	0.002	2035	38.3	62.7
	1247	0.012	0.001	2132	15.3	57.2
	1248	0.010	0.001	2178	14.4	46.9
	1249	0.083	0.007	2084	31.9	40.3
	1250	0.067	0.006	2255	37.0	99.6
	1251	0.006	0.001	2070	6.7	67.6
	1252	0.003	0.000	2068	6.9	60.9
	1253	0.061	0.006	2179	27.7	32.2
	1254	0.055	0.005	2115	43.9	14.5
	1255	0.015	0.001	2385	48.4	51.5
	1256	0.026	0.002	1976	26.5	30.4
	1257	0.040	0.004	2258	22.6	93.4
	1258	0.034	0.003	2172	13.5	52.0
Swiftcurrent Glacier	1259	0.175	0.016	2231	40.6	28.1
	1260	0.009	0.001	2243	17.2	6.8
	1261	0.070	0.006	2219	34.2	334.3
	1262	0.007	0.001	2048	6.2	335.8
	1263	0.009	0.001	2304	37.4	65.8

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Salamander Glacier	1264	0.024	0.002	2120	28.5	338.3
	1265	0.010	0.001	2188	33.8	69.7
	1266	0.065	0.006	2294	18.9	6.5
	1267	0.011	0.001	1926	17.3	113.5
	1268	0.102	0.009	2097	23.3	45.6
	1269	0.004	0.000	2243	30.3	154.5
	1270	0.022	0.002	2211	20.9	39.9
	1271	0.226	0.020	2196	16.6	107.0
	1272	0.008	0.001	2471	41.2	34.7
	1273	0.006	0.001	1995	28.2	130.6
	1274	0.031	0.003	2390	46.1	349.7
	1275	0.018	0.002	1903	10.2	12.1
Grinnell Glacier	1276	0.004	0.000	2172	39.7	84.2
	1277	1.018	0.092	2025	7.4	14.2
	1278	0.017	0.002	2635	41.1	65.6
	1279	0.011	0.001	2257	37.3	103.4
	1280	0.034	0.003	2220	34.8	359.8
Gem Glacier	1281	0.035	0.003	2058	39.4	276.3
	1282	0.039	0.003	2379	36.6	144.7
	1283	0.021	0.002	2511	38.6	36.0
	1284	0.039	0.004	2017	21.0	50.4
	1285	0.056	0.005	1977	43.7	329.5
	1286	0.016	0.001	2146	35.2	92.3
	1287	0.028	0.003	2646	42.4	356.7
	1288	0.047	0.004	1730	25.6	92.8
	1289	0.013	0.001	1837	33.7	341.1
	1290	0.008	0.001	2110	25.6	341.7
Siyeh Glacier	1291	0.083	0.007	2166	16.9	94.8
	1292	0.027	0.002	2144	26.0	98.4
	1293	0.026	0.002	2252	38.9	356.7
	1294	0.005	0.000	2117	49.4	30.1
	1295	0.015	0.001	2265	28.5	354.1
	1296	0.211	0.019	2106	18.5	17.0
	1297	0.009	0.001	2162	42.2	7.3
	1298	0.022	0.002	2205	37.9	8.3
	1299	0.017	0.002	2270	48.6	4.6
	1300	0.037	0.003	2639	39.0	99.5
	1301	0.005	0.000	2420	39.3	133.9
	1302	0.031	0.003	2325	35.6	97.1

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1303	0.020	0.002	2039	42.7	64.3
	1304	0.013	0.001	2036	26.1	71.0
	1305	0.093	0.008	1974	20.4	27.3
	1306	0.012	0.001	2021	20.4	327.5
	1307	0.026	0.002	2326	33.0	107.8
	1308	0.264	0.024	2118	24.6	35.0
	1309	0.007	0.001	2058	58.9	48.2
	1310	0.022	0.002	2307	27.3	40.4
	1311	0.003	0.000	2222	16.8	144.9
	1312	0.020	0.002	2272	30.0	353.4
	1313	0.045	0.004	2323	30.9	117.4
	1314	0.007	0.001	2511	39.7	64.0
	1315	0.089	0.008	2214	21.3	93.1
	1316	0.110	0.010	1898	28.3	83.7
	1317	0.023	0.002	2207	35.7	356.3
	1318	0.038	0.003	2618	23.1	37.0
	1319	0.033	0.003	2315	27.5	10.4
	1320	0.011	0.001	2466	23.6	93.1
	1321	0.033	0.003	2181	35.7	78.0
	1322	0.033	0.003	2340	24.4	151.5
Piegan Glacier	1323	0.280	0.025	2512	16.4	54.3
	1324	0.019	0.002	2205	11.7	146.5
	1325	0.018	0.002	2471	45.2	128.1
	1326	0.095	0.009	2071	21.0	94.6
	1327	0.012	0.001	2276	16.9	148.6
	1328	0.010	0.001	2239	2.1	121.6
Sexton Glacier	1329	0.397	0.036	2225	24.2	76.3
	1330	0.041	0.004	2171	27.1	64.7
	1331	0.007	0.001	2284	28.9	136.7
	1332	0.022	0.002	2348	39.3	113.4
	1333	0.017	0.002	2142	40.5	123.4
	1334	0.017	0.002	2089	41.1	359.0
	1335	0.021	0.002	2414	30.2	51.6
	1336	0.020	0.002	1728	28.2	357.5
	1337	0.022	0.002	2547	43.5	9.0
	1338	0.025	0.002	2189	24.5	58.1
	1339	0.081	0.007	2013	31.1	8.7
	1340	0.071	0.006	2096	23.7	345.6
	1341	0.014	0.001	2123	26.7	49.5

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1342	0.011	0.001	1941	31.2	105.0
	1343	0.153	0.014	2240	26.9	113.0
	1344	0.012	0.001	2257	36.5	47.4
	1345	0.006	0.000	2204	23.7	28.9
	1346	0.022	0.002	2058	26.8	4.4
	1347	0.066	0.006	2357	34.2	358.4
	1348	0.006	0.001	2081	50.2	5.9
	1349	0.003	0.000	2062	48.3	359.1
	1350	0.013	0.001	1769	38.9	52.7
	1351	0.007	0.001	1841	31.6	62.1
	1352	0.090	0.008	2624	41.4	36.3
	1353	0.069	0.006	2275	25.7	76.2
	1354	0.010	0.001	2234	27.3	96.4
	1355	0.011	0.001	2556	17.4	86.1
	1356	0.019	0.002	2385	12.0	6.7
	1357	0.020	0.002	2399	40.5	134.3
	1358	0.004	0.000	2286	14.1	354.5
	1359	0.004	0.000	2297	21.6	0.0
	1360	0.015	0.001	2343	39.3	11.5
	1361	0.113	0.010	2076	34.5	38.5
	1362	0.160	0.014	2132	23.5	56.5
	1363	0.004	0.000	1921	57.6	28.4
	1364	0.004	0.000	1985	51.4	36.8
	1365	0.003	0.000	1926	48.0	349.3
	1366	0.011	0.001	1998	57.8	10.6
	1367	0.018	0.002	2392	26.9	359.9
	1368	0.006	0.001	2520	37.5	60.2
	1369	0.003	0.000	2037	55.9	340.6
	1370	0.010	0.001	2210	36.8	4.0
	1371	0.005	0.000	2111	50.0	12.0
	1372	0.017	0.002	2293	19.4	357.8
	1373	0.011	0.001	2362	27.4	94.9
	1374	0.011	0.001	2333	22.9	152.4
	1375	0.069	0.006	2460	26.1	109.8
	1376	0.055	0.005	2198	36.9	24.2
	1377	0.005	0.000	2357	47.2	300.5
	1378	0.037	0.003	2370	49.9	24.2
	1379	0.277	0.025	2340	8.0	72.4
	1380	0.048	0.004	2510	38.0	118.0

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1381	0.003	0.000	2494	36.6	3.0
	1382	0.004	0.000	2575	43.5	301.1
	1383	0.004	0.000	2550	44.0	323.6
	1384	0.120	0.011	2414	23.1	35.6
	1385	0.023	0.002	2053	31.4	41.9
	1386	0.036	0.003	2373	25.8	65.4
	1387	0.005	0.000	2353	33.1	88.1
	1388	0.076	0.007	2403	32.0	104.8
	1389	0.010	0.001	2166	29.3	109.9
	1390	0.013	0.001	2354	37.4	46.5
	1391	0.026	0.002	2354	38.6	23.0
	1392	0.025	0.002	2246	36.5	12.0
	1393	0.029	0.003	2463	31.2	7.4
	1394	0.006	0.001	2173	29.1	111.3
	1395	0.098	0.009	2284	28.6	89.6
	1396	0.021	0.002	2463	39.3	266.4
	1397	0.012	0.001	2498	31.5	64.6
	1398	0.046	0.004	2192	41.5	10.2
	1399	0.012	0.001	2129	30.2	28.6
	1400	0.008	0.001	2392	36.9	140.8
	1401	0.008	0.001	2488	29.9	52.5
	1402	0.020	0.002	2276	28.7	157.3
	1403	0.040	0.004	2284	22.3	297.5
	1404	0.007	0.001	2010	28.8	51.0
	1405	0.003	0.000	2442	46.4	57.7
	1406	0.007	0.001	2190	26.8	61.5
	1407	0.009	0.001	2048	19.5	66.5
	1408	0.016	0.001	2314	32.4	344.0
	1409	0.013	0.001	2255	34.7	149.1
	1410	0.010	0.001	2001	24.2	78.1
	1411	0.013	0.001	2219	29.5	64.4
	1412	0.004	0.000	2158	22.4	75.0
	1413	0.099	0.009	2479	45.5	6.8
Jackson Glacier	1414	1.255	0.113	2180	22.9	32.9
	1415	0.003	0.000	2203	30.4	72.7
	1416	0.004	0.000	2374	38.4	66.1
	1417	0.004	0.000	2100	22.5	81.8
	1418	0.014	0.001	2488	36.6	52.8
	1419	0.110	0.010	2399	31.0	322.6

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Logan Glacier	1420	0.014	0.001	2075	15.9	76.1
	1421	0.458	0.041	2274	29.7	316.4
	1422	0.020	0.002	2038	17.5	61.0
	1423	0.503	0.045	2213	23.4	38.3
	1424	0.221	0.020	2498	30.4	323.3
	1425	0.004	0.000	2675	46.5	78.9
	1426	0.011	0.001	2337	42.2	351.0
	1427	0.004	0.000	2853	40.1	345.3
Blackfoot Glacier	1428	0.014	0.001	2658	38.6	87.6
	1429	0.027	0.002	2771	30.8	85.6
	1430	1.755	0.158	2288	16.6	20.5
	1431	0.032	0.003	2418	36.6	286.4
	1432	0.052	0.005	2789	45.5	165.1
	1433	0.002	0.000	2572	43.4	107.3
	1434	0.006	0.001	2221	26.3	298.2
	1435	0.187	0.017	2136	22.4	12.1
	1436	0.005	0.000	2286	35.0	280.3
	1437	0.018	0.002	2023	38.3	300.9
	1438	0.003	0.000	2256	30.8	316.6
	1439	0.007	0.001	2597	46.8	168.0
	1440	0.005	0.000	2001	41.0	325.1
	1441	0.139	0.013	2434	36.5	341.4
	1442	0.012	0.001	2481	34.9	59.6
	1443	0.456	0.041	2395	21.5	117.7
	1444	0.058	0.005	2502	40.6	15.0
Red Eagle Glacier	1445	0.049	0.004	2336	35.5	319.3
	1446	0.004	0.000	2289	26.6	227.5
	1447	0.181	0.016	2156	22.1	32.2
	1448	0.076	0.007	2429	38.5	312.8
	1449	0.011	0.001	2523	32.3	350.1
	1450	0.052	0.005	2223	21.1	133.5
	1451	0.004	0.000	2487	53.9	7.7
	1452	0.005	0.000	2321	33.2	125.4
	1453	0.007	0.001	2454	35.1	170.8
	1454	0.004	0.000	2245	30.5	120.0
	1455	0.035	0.003	2373	20.8	148.0
	1456	0.005	0.000	2203	24.4	158.3
	1457	0.157	0.014	2418	9.6	70.9
	1458	0.006	0.001	2280	25.8	133.4

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Pumpelly Glacier	1459	0.005	0.000	2513	34.0	92.9
	1460	0.003	0.000	2312	13.5	113.8
	1461	0.006	0.001	2267	22.2	135.5
	1462	0.022	0.002	2494	15.7	226.9
	1463	0.002	0.000	2260	34.6	209.9
	1464	0.005	0.000	2157	24.1	148.3
	1465	0.012	0.001	2459	14.4	218.1
	1466	0.943	0.085	2527	24.8	78.2
	1467	0.006	0.001	2255	9.2	105.9
	1468	0.022	0.002	2165	23.6	64.2
	1469	0.004	0.000	2209	9.4	122.9
	1470	0.010	0.001	2055	18.0	163.3
	1471	0.101	0.009	2663	28.2	346.2
	1472	0.094	0.008	2527	29.6	333.7
	1473	0.044	0.004	2157	24.4	128.2
	1474	0.003	0.000	2168	6.1	95.7
	1475	0.003	0.000	2214	17.1	260.3
	1476	0.171	0.015	2212	20.2	31.1
	1477	0.041	0.004	2140	16.6	31.3
	1478	0.010	0.001	1839	48.7	350.2
	1479	0.097	0.009	2112	37.3	287.9
	1480	0.068	0.006	2181	30.4	358.8
	1481	0.006	0.001	2059	33.9	72.3
	1482	0.095	0.009	2031	17.1	14.6
	1483	0.007	0.001	2330	44.1	354.9
	1484	0.028	0.003	2248	15.0	64.5
	1485	0.014	0.001	2813	42.2	103.4
	1486	0.005	0.000	2386	38.2	332.9
	1487	0.027	0.002	2481	34.8	175.3
	1488	0.013	0.001	2256	36.9	66.6
	1489	0.006	0.001	2758	40.4	142.3
	1490	0.015	0.001	2349	33.7	48.6
	1491	0.166	0.015	2089	9.6	1.0
	1492	0.019	0.002	1905	13.8	67.4
	1493	0.026	0.002	2337	34.2	131.8
	1494	0.032	0.003	2076	23.6	150.8
	1495	0.047	0.004	2173	35.4	138.3
	1496	0.007	0.001	1852	14.1	57.1
	1497	0.004	0.000	2137	16.1	122.3

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1498	0.003	0.000	2182	26.8	108.7
	1499	0.002	0.000	2116	21.7	133.0
	1500	0.005	0.000	2171	21.3	90.4
	1501	0.003	0.000	2195	20.1	103.8
	1502	0.010	0.001	2251	32.2	63.9
	1503	0.009	0.001	2514	30.0	86.8
	1504	0.009	0.001	2398	26.2	64.1
	1505	0.011	0.001	2649	18.9	77.3
	1506	0.120	0.011	2222	24.9	18.3
	1507	0.014	0.001	2555	28.3	117.6
	1508	0.014	0.001	2472	30.9	122.5
	1509	0.050	0.004	2260	8.2	138.1
	1510	0.058	0.005	1986	28.2	16.6
	1511	0.013	0.001	2393	30.0	112.6
	1512	0.017	0.002	2000	40.1	329.5
	1513	0.107	0.010	2262	25.6	79.5
	1514	0.066	0.006	2388	18.2	81.8
	1515	0.157	0.014	2211	16.9	30.8
	1516	0.035	0.003	2356	9.3	66.3
	1517	0.039	0.004	2170	47.9	354.7
	1518	0.098	0.009	2117	14.8	61.3
	1519	0.007	0.001	2332	25.7	333.3
	1520	0.034	0.003	2285	28.7	122.4
	1521	0.007	0.001	2339	42.1	342.0
	1522	0.005	0.000	1846	36.3	128.3
	1523	0.013	0.001	2294	29.4	75.5
	1524	0.010	0.001	2291	28.1	44.3
	1525	0.033	0.003	2269	16.8	26.6
	1526	0.050	0.004	1860	23.9	23.9
	1527	0.004	0.000	2341	47.9	7.5
	1528	0.032	0.003	2210	30.1	79.0
	1529	0.011	0.001	2428	49.0	4.0
	1530	0.008	0.001	2484	42.6	5.2
	1531	0.030	0.003	1900	22.1	67.3
	1532	0.004	0.000	2312	26.7	60.5
	1533	0.012	0.001	2717	40.1	45.2
	1534	0.226	0.020	2022	8.0	51.5
	1535	0.053	0.005	1992	45.6	325.0
	1536	0.036	0.003	2073	14.5	37.6

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1537	0.004	0.000	1993	12.7	56.9
	1538	0.011	0.001	2019	34.8	61.3
	1539	0.015	0.001	1757	25.7	66.1
	1540	0.050	0.005	1927	28.0	51.2
	1541	0.022	0.002	1760	30.8	354.9
	1542	0.003	0.000	2034	49.3	26.4
	1543	0.159	0.014	2016	44.9	21.2
	1544	0.006	0.001	2340	63.5	33.8
	1545	0.010	0.001	2197	38.4	332.4
	1546	0.011	0.001	2309	42.7	342.9
	1547	0.046	0.004	2040	16.6	1.1
	1548	0.004	0.000	2417	44.8	76.4
	1549	0.006	0.001	2250	65.5	21.2
	1550	0.004	0.000	2291	39.8	65.7
	1551	0.008	0.001	2221	29.8	18.7
	1552	0.013	0.001	2092	29.9	29.1
	1553	0.002	0.000	2294	30.1	32.3
	1554	0.012	0.001	2386	42.2	94.9
Lupfer Glacier	1555	0.138	0.012	1868	30.6	94.9
	1556	0.024	0.002	1895	27.2	70.2
	1557	0.051	0.005	2107	20.3	43.8
	1558	0.008	0.001	1692	31.6	49.5
	1559	0.005	0.000	2052	56.5	40.5
	1560	0.034	0.003	2097	19.7	11.5
	1561	0.092	0.008	2262	19.8	48.6
	1562	0.004	0.000	2102	34.4	357.8
	1563	0.020	0.002	2333	28.7	43.8
	1564	0.012	0.001	2112	35.7	105.4
	1565	0.011	0.001	2638	42.7	47.3
	1566	0.020	0.002	2539	36.1	23.7
	1567	0.023	0.002	1972	12.5	116.7
	1568	0.114	0.010	2270	28.9	73.8
	1569	0.026	0.002	2084	30.5	127.1
	1570	0.014	0.001	2170	20.0	12.0
	1571	0.008	0.001	2361	25.7	96.7
	1572	0.046	0.004	2446	21.4	10.9
	1573	0.094	0.008	1944	22.3	16.4
	1574	0.003	0.000	2567	35.4	351.0
	1575	0.013	0.001	2183	24.6	2.7

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1576	0.003	0.000	2172	2.1	359.8
	1577	0.002	0.000	2191	19.5	346.3
	1578	0.019	0.002	2089	33.1	9.0
	1579	0.017	0.002	2334	26.8	351.0
	1580	0.033	0.003	2556	32.2	5.7
	1581	0.025	0.002	2219	18.4	55.8
	1582	0.060	0.005	2079	27.7	30.8
	1583	0.036	0.003	2198	39.4	50.1
	1584	0.007	0.001	2188	26.9	164.7
	1585	0.005	0.000	2258	43.4	74.5
	1586	0.002	0.000	2170	34.3	54.6
	1587	0.001	0.000	2063	26.7	322.3
	1588	0.464	0.042	2420	9.7	358.1
Sperry Glacier	1589	1.281	0.115	2384	14.3	3.0
	1590	0.044	0.004	2719	26.8	121.8
	1591	0.001	0.000	2332	33.1	75.2
Stanton Glacier	1592	0.523	0.047	2505	19.3	42.5
Grant Glacier	1593	0.343	0.031	2412	21.1	71.4
	1594	0.001	0.000	2407	42.9	59.1
	1595	0.003	0.000	2107	41.1	64.2
	1596	0.005	0.000	2424	10.3	353.7
	1597	0.015	0.001	2163	17.8	9.3
	1598	0.025	0.002	2231	44.0	328.9
	1599	0.002	0.000	2274	22.5	114.1
	1600	0.006	0.001	1947	2.9	325.1
Harrison Glacier	1601	1.413	0.127	2492	9.5	94.7
	1602	0.184	0.017	2203	15.7	92.9
	9980	0.182	0.016	2212	12.7	97.3

1991

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1003	0.009	0.002	2701	32.9	130.5
	1004	0.090	0.020	2375	12.9	103.2

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1005	0.040	0.009	1994	27.6	34.2
	1006	0.019	0.002	2096	27.5	327.1
	1008	0.019	0.004	2288	53.8	1.1
	1010	0.008	0.002	2051	32.0	38.7
	1011	0.018	0.004	2214	40.7	4.5
	1012	0.089	0.020	2404	30.0	37.1
	1014	0.012	0.003	2188	21.9	68.5
	1015	0.030	0.006	2459	41.3	45.7
	1021	0.046	0.010	1713	19.8	49.6
	1022	0.045	0.010	2191	26.0	342.5
	1023	0.026	0.006	2173	20.9	63.7
	1024	0.296	0.065	2293	25.3	352.5
	1027	0.078	0.017	2352	42.2	342.1
Hudson Glacier	1029	0.006	0.003	2142	41.3	10.7
	1030	0.004	0.001	2001	42.5	353.5
	1032	0.006	0.002	2455	2.5	264.5
	1033	0.052	0.011	2301	46.0	1.5
	1034	0.007	0.001	2084	47.1	21.4
	1037	0.009	0.002	2344	49.0	332.8
	1038	0.079	0.007	2137	45.1	64.2
	1039	0.053	0.012	2367	45.7	10.3
	1040	0.008	0.002	2076	38.2	80.2
Boulder Glacier	1041	0.056	0.012	2369	25.7	15.4
Harris Glacier	1044	0.040	0.009	1922	17.3	5.2
	1045	0.003	0.001	2257	29.0	48.3
	1049	0.071	0.016	2172	9.9	44.5
	1051	0.004	0.001	2400	31.6	81.7
	1052	0.004	0.001	2101	24.4	44.1
	1053	1.266	0.278	2071	34.7	313.6
Agassiz Glacier	1055	0.030	0.003	2376	13.6	66.0
	1056	0.002	0.000	2139	57.3	343.0
	1057	0.017	0.004	2273	11.4	22.3
	1058	0.129	0.028	2133	68.1	347.8
	1064	0.004	0.001	2518	47.3	26.9
	1065	0.006	0.001	2195	40.1	6.1
	1066	0.007	0.001	2246	39.8	336.6
	1067	0.001	0.000	2364	8.1	318.4
	1068	0.063	0.026	2172	32.0	336.5
	1069	1.125	0.101	2117	40.1	338.7

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Kintla Glacier	1070	0.091	0.020	2571	35.6	87.6
	1071	0.165	0.015	2109	24.0	43.3
	1072	0.061	0.006	2579	17.1	13.6
	1073	0.042	0.009	2548	27.5	328.5
	1075	0.142	0.031	2215	31.5	31.3
	1076	0.004	0.000	2304	49.2	14.5
	1078	0.004	0.001	2415	9.2	0.5
	1079	0.090	0.020	2365	34.1	22.4
	1080	0.004	0.001	2324	17.3	34.3
	1081	0.027	0.006	2378	31.2	327.1
Thunderbird Glacier	1083	0.152	0.014	2471	30.9	356.4
	1084	0.115	0.025	2643	31.8	56.5
	1085	0.018	0.002	2207	28.0	62.5
	1086	0.044	0.010	2669	35.3	97.7
	1088	0.004	0.001	2120	18.3	13.4
	1089	0.070	0.015	2288	22.1	44.4
	1090	0.179	0.039	2430	43.7	91.1
	1091	0.018	0.004	2421	38.1	86.7
	1093	0.238	0.052	2411	38.5	352.6
	1094	0.015	0.001	2263	24.3	20.2
Dixon Glacier	1095	0.062	0.014	2239	34.3	309.9
	1096	0.009	0.001	2334	23.0	327.9
	1098	0.061	0.014	2053	38.8	350.0
	1099	0.004	0.001	2033	33.1	278.8
	1100	0.017	0.004	1987	43.3	297.7
	1101	0.015	0.003	2765	38.6	152.4
	1104	0.075	0.016	2875	47.8	95.6
	1109	0.030	0.007	2030	25.9	24.0
	1112	0.218	0.020	2129	42.2	343.3
	1114	0.089	0.020	2292	41.1	108.1
Baby Glacier	1115	0.010	0.002	2073	33.9	106.7
	1116	0.007	0.003	1980	40.1	130.7
	1117	0.008	0.002	2477	47.6	41.2
	1119	0.520	0.047	2518	52.2	1.7
	1120	0.038	0.003	2067	20.5	59.9
	1121	0.014	0.003	2160	35.4	187.3
	1122	0.023	0.005	2136	26.9	159.1
	1123	0.234	0.052	2374	43.1	68.6
	1124	0.044	0.010	2201	51.0	155.8

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Weasel Collar Glacier	1125	0.043	0.009	2267	35.7	135.6
	1126	0.009	0.001	2185	8.8	15.5
	1129	0.007	0.002	1790	25.1	1.8
Carter Glaciers	1130	0.008	0.002	2245	30.5	92.4
	1131	0.013	0.003	1899	32.6	354.4
	1132	0.041	0.009	2359	18.9	40.3
	1133	0.063	0.014	2270	27.3	109.2
	1134	1.172	0.105	1970	26.2	342.3
	1136	0.028	0.006	2664	34.6	175.4
	1137	0.003	0.001	2596	32.7	185.5
	1139	0.047	0.010	2297	37.3	105.1
	1140	0.052	0.011	2512	26.6	164.6
	1141	0.000	0.000	2495	11.2	96.4
Rainbow Glacier	1143	0.155	0.034	2268	22.4	54.5
	1148	0.421	0.093	2185	20.2	18.7
	1149	0.046	0.010	2198	34.2	16.6
	1150	0.001	0.000	2316	20.8	70.2
Carter Glaciers	1151	0.032	0.013	2198	17.7	94.7
	1155	0.017	0.004	2345	28.8	346.1
Old Sun Glacier	1156	0.003	0.001	2673	16.8	97.3
	1157	0.109	0.010	2242	32.8	359.1
	1159	0.025	0.006	2147	32.1	46.2
	1160	0.007	0.003	2221	30.1	102.3
	1161	0.006	0.001	2427	35.5	355.7
	1162	0.010	0.002	2272	38.2	166.3
	1163	0.022	0.005	2908	43.6	12.5
	1165	0.287	0.026	2290	41.4	133.5
	1166	0.003	0.001	1986	34.7	232.7
	1167	0.002	0.000	2243	31.7	52.6
	1168	0.002	0.000	2217	4.4	8.9
	1169	0.101	0.022	2981	35.9	59.8
	1170	0.015	0.003	2249	14.6	74.0
	1172	0.014	0.003	1738	25.4	56.9
	1174	0.002	0.000	2265	9.0	41.3
	1176	0.140	0.013	2333	40.3	354.9
	1179	0.492	0.108	2269	8.4	69.4
	1180	0.011	0.002	2311	16.6	116.9
	1183	0.004	0.001	2214	50.1	357.7

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Chaney Glacier	1185	0.007	0.002	2252	17.9	26.6
	1186	0.003	0.001	2046	35.2	25.1
	1187	0.023	0.005	2176	25.8	91.0
	1188	0.291	0.064	2049	54.1	356.5
	1189	0.020	0.004	2122	42.1	316.4
	1191	0.065	0.014	2178	38.2	275.1
	1192	0.343	0.031	2071	40.6	7.3
	1193	0.555	0.050	2735	47.0	126.7
	1194	0.010	0.002	2103	38.8	18.3
Ipasha Glacier	1195	0.016	0.003	2288	20.8	26.8
	1196	0.019	0.004	2038	30.3	30.0
	1197	0.005	0.001	2021	38.5	332.5
	1199	0.026	0.006	2492	29.8	297.0
	1200	0.012	0.003	2111	45.9	354.7
Two Ocean Glacier	1201	0.008	0.002	2585	15.1	92.1
	1203	0.007	0.001	2197	38.6	142.0
	1204	0.111	0.024	2684	43.3	103.1
	1205	0.060	0.013	2403	36.0	308.4
	1206	0.015	0.003	1983	21.7	131.8
	1207	0.018	0.004	2300	12.5	40.4
	1211	0.007	0.002	2644	34.8	143.1
	1213	0.029	0.006	2405	20.1	55.8
	1214	0.356	0.078	2485	17.5	206.6
	1216	0.012	0.003	2644	31.0	125.4
	1217	0.031	0.007	2562	23.8	111.1
	1219	0.114	0.025	2475	18.6	4.8
	1221	0.033	0.007	2431	26.9	86.3
	1222	0.044	0.004	2502	22.7	186.4
	1223	0.011	0.002	1875	49.3	341.9
	1225	0.009	0.002	2199	45.8	104.4
	1227	0.017	0.004	1785	31.5	74.5
	1228	0.010	0.002	1971	44.0	6.8
	1230	0.024	0.005	2214	26.7	61.6
	1231	0.025	0.006	1730	21.0	17.5
	1232	0.108	0.024	2059	15.5	93.0
	1235	0.011	0.002	1763	37.2	351.4
	1237	0.033	0.003	2284	30.1	30.0
	1240	0.062	0.006	1878	9.7	78.0
	1243	0.077	0.017	2090	44.6	110.3

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Gem Glacier	1244	0.009	0.002	1881	26.7	318.5
	1246	0.056	0.012	2035	38.3	62.7
	1247	0.012	0.003	2132	15.3	57.2
	1250	0.037	0.008	2255	37.0	99.6
	1251	0.228	0.020	2070	6.7	67.6
	1252	0.012	0.003	2068	6.9	60.9
	1274	0.034	0.007	2390	46.1	349.7
	1278	0.054	0.012	2635	41.1	65.6
	1279	0.018	0.004	2257	37.3	103.4
	1283	0.085	0.008	2511	38.6	36.0
	1288	0.219	0.031	1730	25.6	92.8
	1292	0.020	0.004	2144	26.0	98.4
	1293	0.031	0.007	2252	38.9	356.7
	1294	0.004	0.001	2117	49.4	30.1
	1297	0.014	0.003	2162	42.2	7.3
	1299	0.027	0.006	2270	48.6	4.6
	1302	0.021	0.005	2325	35.6	97.1
	1303	0.003	0.001	2039	42.7	64.3
	1304	0.015	0.003	2036	26.1	71.0
	1305	0.035	0.008	1974	20.4	27.3
	1308	0.020	0.004	2118	24.6	35.0
	1311	0.010	0.002	2222	16.8	144.9
	1313	0.283	0.026	2323	30.9	117.4
	1317	0.019	0.004	2207	35.7	356.3
	1319	0.400	0.088	2315	27.5	10.4
	1322	0.032	0.007	2340	24.4	151.5
	1334	0.123	0.011	2089	41.1	359.0
	1337	0.050	0.011	2547	43.5	9.0
	1341	0.007	0.002	2123	26.7	49.5
	1342	0.080	0.018	1941	31.2	105.0
	1343	0.014	0.003	2240	26.9	113.0
	1347	0.006	0.001	2357	34.2	358.4
	1348	0.018	0.004	2081	50.2	5.9
	1349	0.007	0.002	2062	48.3	359.1
	1350	0.015	0.003	1769	38.9	52.7
	1352	0.150	0.033	2624	41.4	36.3
	1353	0.005	0.001	2275	25.7	76.2
	1356	0.015	0.003	2385	12.0	6.7
	1357	0.008	0.002	2399	40.5	134.3

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1359	0.012	0.003	2297	21.6	0.0
	1361	0.014	0.003	2076	34.5	38.5
	1363	0.014	0.001	1921	57.6	28.4
	1368	0.256	0.056	2520	37.5	60.2
	1369	0.046	0.010	2037	55.9	340.6
	1370	0.003	0.001	2210	36.8	4.0
	1372	0.001	0.000	2293	19.4	357.8
	1376	0.011	0.002	2198	36.9	24.2
	1377	0.032	0.007	2357	47.2	300.5
	1379	0.006	0.001	2340	8.0	72.4
	1380	0.077	0.017	2510	38.0	118.0
	1384	0.096	0.021	2414	23.1	35.6
	1385	0.019	0.004	2053	31.4	41.9
	1386	0.018	0.004	2373	25.8	65.4
	1387	0.008	0.002	2353	33.1	88.1
	1388	0.014	0.003	2403	32.0	104.8
	1389	0.019	0.004	2166	29.3	109.9
	1390	0.031	0.007	2354	37.4	46.5
	1391	0.002	0.001	2354	38.6	23.0
	1392	0.012	0.003	2246	36.5	12.0
	1393	0.015	0.003	2463	31.2	7.4
	1394	0.016	0.004	2173	29.1	111.3
	1396	0.014	0.003	2463	39.3	266.4
	1397	0.026	0.006	2498	31.5	64.6
	1398	0.090	0.008	2192	41.5	10.2
	1399	1.136	0.102	2129	30.2	28.6
	1402	0.004	0.001	2276	28.7	157.3
	1404	0.100	0.009	2010	28.8	51.0
	1405	0.019	0.004	2442	46.4	57.7
	1408	0.204	0.018	2314	32.4	344.0
	1411	0.008	0.002	2219	29.5	64.4
	1413	0.010	0.001	2479	45.5	6.8
	1415	0.016	0.004	2203	30.4	72.7
	1416	0.023	0.005	2374	38.4	66.1
	1418	0.031	0.007	2488	36.6	52.8
	1420	0.051	0.011	2075	15.9	76.1
	1421	0.005	0.000	2274	29.7	316.4
Logan Glacier	1423	0.002	0.000	2213	23.4	38.3
	1424	0.017	0.004	2498	30.4	323.3

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Blackfoot Glacier	1425	0.005	0.001	2675	46.5	78.9
	1427	0.008	0.002	2853	40.1	345.3
	1428	0.128	0.012	2658	38.6	87.6
	1429	0.009	0.002	2771	30.8	85.6
	1430	0.007	0.002	2288	16.6	20.5
	1433	0.021	0.005	2572	43.4	107.3
	1434	0.045	0.010	2221	26.3	298.2
	1435	0.009	0.002	2136	22.4	12.1
	1436	0.005	0.001	2286	35.0	280.3
	1437	0.010	0.002	2023	38.3	300.9
	1438	0.047	0.010	2256	30.8	316.6
	1439	0.009	0.002	2597	46.8	168.0
	1440	0.008	0.002	2001	41.0	325.1
	1441	0.007	0.002	2434	36.5	341.4
	1442	0.038	0.016	2481	34.9	59.6
	1446	0.007	0.002	2289	26.6	227.5
	1450	0.005	0.001	2223	21.1	133.5
	1451	0.035	0.008	2487	53.9	7.7
	1452	0.012	0.003	2321	33.2	125.4
	1453	0.017	0.004	2454	35.1	170.8
	1456	0.015	0.003	2203	24.4	158.3
	1460	0.065	0.014	2312	13.5	113.8
	1469	0.034	0.007	2209	9.4	122.9
	1477	0.025	0.006	2140	16.6	31.3
	1478	0.032	0.007	1839	48.7	350.2
	1481	0.003	0.001	2059	33.9	72.3
	1536	0.103	0.023	2073	14.5	37.6
	1542	0.057	0.013	2034	49.3	26.4
	1548	0.020	0.004	2417	44.8	76.4
	1549	0.113	0.010	2250	65.5	21.2
	1550	0.023	0.005	2291	39.8	65.7
	1564	0.010	0.002	2112	35.7	105.4
	1567	0.001	0.000	1972	12.5	116.7
	1568	0.972	0.088	2270	28.9	73.8
	1569	0.429	0.039	2084	30.5	127.1
	1571	0.395	0.087	2361	25.7	96.7
	1572	0.001	0.000	2446	21.4	10.9
	1573	0.004	0.001	1944	22.3	16.4
	1574	0.337	0.074	2567	35.4	351.0

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1575	0.005	0.001	2183	24.6	2.7
	1576	0.021	0.005	2172	2.1	359.8
	1577	0.021	0.005	2191	19.5	346.3
	1579	0.005	0.001	2334	26.8	351.0
	1580	1.381	0.124	2556	32.2	5.7
	1581	0.201	0.018	2219	18.4	55.8
	1582	0.198	0.018	2079	27.7	30.8
	1584	0.021	0.005	2188	26.9	164.7
	1585	0.011	0.005	2258	43.4	74.5
	1587	0.012	0.003	2063	26.7	322.3
	1588	0.008	0.002	2420	9.7	358.1
Sperry Glacier	1589	0.044	0.010	2384	14.3	3.0
	1590	0.012	0.003	2719	26.8	121.8
Grant Glacier	1593	0.046	0.010	2412	21.1	71.4
	1594	0.013	0.001	2407	42.9	59.1
	1595	0.058	0.013	2107	41.1	64.2
	1596	0.013	0.003	2424	10.3	353.7
	1598	0.017	0.004	2231	44.0	328.9
	1600	0.150	0.033	1947	2.9	325.1
	9980	0.022	0.005	2212	12.7	97.3

1995

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1005	0.030	0.003	1994	27.6	34.2
	1006	0.009	0.001	2096	27.5	327.1
	1008	0.012	0.001	2288	53.8	1.1
	1010	0.007	0.001	2051	32.0	38.7
	1011	0.021	0.002	2214	40.7	4.5
	1012	0.114	0.011	2404	30.0	37.1
	1014	0.020	0.002	2188	21.9	68.5
	1015	0.034	0.003	2459	41.3	45.7
	1021	0.020	0.002	1713	19.8	49.6
	1022	0.096	0.010	2191	26.0	342.5
	1023	0.026	0.003	2173	20.9	63.7

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Hudson Glacier	1024	0.254	0.025	2293	25.3	352.5
	1027	0.067	0.007	2352	42.2	342.1
	1029	0.007	0.001	2142	41.3	10.7
	1030	0.005	0.000	2001	42.5	353.5
	1033	0.045	0.004	2301	46.0	1.5
	1034	0.008	0.001	2084	47.1	21.4
	1037	0.008	0.001	2344	49.0	332.8
	1038	0.109	0.011	2137	45.1	64.2
Harris Glacier	1039	0.072	0.007	2367	45.7	10.3
	1040	0.007	0.001	2076	38.2	80.2
	1044	0.056	0.006	1922	17.3	5.2
	1045	0.007	0.001	2257	29.0	48.3
	1052	0.003	0.000	2101	24.4	44.1
	1056	0.002	0.000	2139	57.3	343.0
	1057	0.017	0.002	2273	11.4	22.3
	1064	0.004	0.001	2518	47.3	26.9
	1065	0.006	0.001	2195	40.1	6.1
	1068	0.063	0.006	2172	32.0	336.5
	1073	0.056	0.006	2548	27.5	328.5
	1075	0.144	0.014	2215	31.5	31.3
Thunderbird Glacier	1076	0.004	0.000	2304	49.2	14.5
	1081	0.031	0.003	2378	31.2	327.1
	1084	0.153	0.015	2643	31.8	56.5
	1086	0.051	0.005	2669	35.3	97.7
	1088	0.005	0.000	2120	18.3	13.4
	1089	0.097	0.010	2288	22.1	44.4
	1090	0.163	0.016	2430	43.7	91.1
	1091	0.025	0.003	2421	38.1	86.7
	1093	0.237	0.024	2411	38.5	352.6
	1095	0.059	0.006	2239	34.3	309.9
	1096	0.009	0.001	2334	23.0	327.9
	1098	0.060	0.006	2053	38.8	350.0
	1100	0.018	0.002	1987	43.3	297.7
	1101	0.016	0.002	2765	38.6	152.4
	1104	0.083	0.008	2875	47.8	95.6
	1109	0.022	0.002	2030	25.9	24.0
	1112	0.191	0.008	2129	42.2	343.3
	1116	0.006	0.001	1980	40.1	130.7
	1117	0.008	0.001	2477	47.6	41.2

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Baby Glacier	1119	0.520	0.021	2518	52.2	1.7
	1120	0.048	0.002	2067	20.5	59.9
	1121	0.015	0.002	2160	35.4	187.3
	1122	0.022	0.002	2136	26.9	159.1
	1123	0.298	0.012	2374	43.1	68.6
	1124	0.041	0.004	2201	51.0	155.8
	1125	0.040	0.004	2267	35.7	135.6
Weasel Collar Glacier	1126	0.013	0.001	2185	8.8	15.5
	1129	0.012	0.001	1790	25.1	1.8
	1130	0.021	0.002	2245	30.5	92.4
	1131	0.016	0.002	1899	32.6	354.4
Carter Glaciers	1132	0.045	0.005	2359	18.9	40.3
	1133	0.059	0.006	2270	27.3	109.2
	1134	1.172	0.117	1970	26.2	342.3
	1136	0.032	0.003	2664	34.6	175.4
	1137	0.004	0.000	2596	32.7	185.5
	1139	0.048	0.005	2297	37.3	105.1
	1140	0.041	0.004	2512	26.6	164.6
	1143	0.165	0.016	2268	22.4	54.5
	1148	0.430	0.043	2185	20.2	18.7
	1149	0.052	0.005	2198	34.2	16.6
	1150	0.004	0.000	2316	20.8	70.2
Carter Glaciers	1151	0.061	0.006	2198	17.7	94.7
	1155	0.016	0.002	2345	28.8	346.1
Old Sun Glacier	1156	0.004	0.000	2673	16.8	97.3
	1157	0.171	0.017	2242	32.8	359.1
	1159	0.017	0.002	2147	32.1	46.2
	1160	0.004	0.000	2221	30.1	102.3
	1161	0.005	0.001	2427	35.5	355.7
	1162	0.011	0.001	2272	38.2	166.3
	1163	0.017	0.002	2908	43.6	12.5
	1165	0.211	0.021	2290	41.4	133.5
	1166	0.002	0.000	1986	34.7	232.7
	1167	0.002	0.000	2243	31.7	52.6
	1168	0.001	0.000	2217	4.4	8.9
	1169	0.083	0.008	2981	35.9	59.8
	1170	0.015	0.001	2249	14.6	74.0
	1172	0.015	0.002	1738	25.4	56.9

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Chaney Glacier	1174	0.002	0.000	2265	9.0	41.3
	1176	0.135	0.013	2333	40.3	354.9
	1179	0.496	0.050	2269	8.4	69.4
	1180	0.008	0.000	2311	16.6	116.9
	1183	0.003	0.000	2214	50.1	357.7
	1185	0.003	0.000	2252	17.9	26.6
	1186	0.003	0.000	2046	35.2	25.1
	1187	0.028	0.003	2176	25.8	91.0
	1188	0.327	0.013	2049	54.1	356.5
	1189	0.016	0.002	2122	42.1	316.4
	1191	0.071	0.007	2178	38.2	275.1
	1192	0.360	0.036	2071	40.6	7.3
Ipasha Glacier	1193	0.560	0.022	2735	47.0	126.7
	1194	0.010	0.001	2103	38.8	18.3
	1195	0.021	0.006	2288	20.8	26.8
	1196	0.016	0.002	2038	30.3	30.0
	1197	0.007	0.001	2021	38.5	332.5
	1199	0.024	0.002	2492	29.8	297.0
Two Ocean Glacier	1200	0.003	0.000	2111	45.9	354.7
	1201	0.007	0.001	2585	15.1	92.1
	1203	0.008	0.001	2197	38.6	142.0
	1204	0.115	0.011	2684	43.3	103.1
	1205	0.059	0.006	2403	36.0	308.4
	1206	0.016	0.002	1983	21.7	131.8
	1207	0.017	0.005	2300	12.5	40.4
	1211	0.007	0.001	2644	34.8	143.1
	1213	0.029	0.003	2405	20.1	55.8
	1214	0.347	0.035	2485	17.5	206.6
	1216	0.013	0.001	2644	31.0	125.4
	1219	0.124	0.012	2475	18.6	4.8
	1221	0.034	0.010	2431	26.9	86.3
	1222	0.042	0.004	2502	22.7	186.4
	1227	0.016	0.002	1785	31.5	74.5
	1228	0.011	0.003	1971	44.0	6.8
	1230	0.026	0.007	2214	26.7	61.6
	1232	0.109	0.004	2059	15.5	93.0
	1235	0.013	0.001	1763	37.2	351.4
	1236	0.009	0.001	2269	30.2	142.9
	1237	0.032	0.003	2284	30.1	30.0

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1240	0.062	0.006	1878	9.7	78.0
	1243	0.064	0.006	2090	44.6	110.3
	1244	0.008	0.001	1881	26.7	318.5
	1246	0.052	0.005	2035	38.3	62.7
	1247	0.013	0.001	2132	15.3	57.2
	1248	0.024	0.002	2178	14.4	46.9
	1249	0.030	0.003	2084	31.9	40.3
	1250	0.035	0.003	2255	37.0	99.6
	1251	0.226	0.009	2070	6.7	67.6
	1252	0.011	0.001	2068	6.9	60.9
	1253	0.066	0.007	2179	27.7	32.2
	1263	0.217	0.009	2304	37.4	65.8
	1268	0.740	0.030	2097	23.3	45.6
	1274	0.019	0.002	2390	46.1	349.7
	1276	0.024	0.002	2172	39.7	84.2
	1278	0.053	0.005	2635	41.1	65.6
	1279	0.013	0.001	2257	37.3	103.4
Gem Glacier	1283	0.092	0.009	2511	38.6	36.0
	1288	0.254	0.025	1730	25.6	92.8
	1292	0.021	0.002	2144	26.0	98.4
	1293	0.020	0.002	2252	38.9	356.7
	1294	0.004	0.000	2117	49.4	30.1
	1297	0.011	0.001	2162	42.2	7.3
	1299	0.017	0.002	2270	48.6	4.6
	1302	0.018	0.002	2325	35.6	97.1
	1305	0.032	0.003	1974	20.4	27.3
	1308	0.014	0.001	2118	24.6	35.0
	1311	0.008	0.001	2222	16.8	144.9
	1313	0.275	0.011	2323	30.9	117.4
	1317	0.021	0.002	2207	35.7	356.3
	1319	0.429	0.043	2315	27.5	10.4
	1322	0.027	0.003	2340	24.4	151.5
	1341	0.003	0.001	2123	26.7	49.5
	1342	0.078	0.008	1941	31.2	105.0
	1343	0.011	0.001	2240	26.9	113.0
	1347	0.006	0.001	2357	34.2	358.4
	1349	0.006	0.001	2062	48.3	359.1
	1350	0.014	0.001	1769	38.9	52.7
	1353	0.004	0.000	2275	25.7	76.2

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1356	0.015	0.001	2385	12.0	6.7
	1357	0.008	0.001	2399	40.5	134.3
	1361	0.014	0.001	2076	34.5	38.5
	1370	0.003	0.000	2210	36.8	4.0
	1372	0.001	0.000	2293	19.4	357.8
	1383	0.017	0.002	2550	44.0	323.6
	1385	0.018	0.002	2053	31.4	41.9
	1386	0.011	0.003	2373	25.8	65.4
	1387	0.008	0.001	2353	33.1	88.1
	1389	0.019	0.002	2166	29.3	109.9
	1391	0.004	0.000	2354	38.6	23.0
	1394	0.017	0.002	2173	29.1	111.3
	1406	0.374	0.037	2190	26.8	61.5
	1410	0.501	0.050	2001	24.2	78.1
Jackson Glacier	1414	0.167	0.048	2180	22.9	32.9
	1417	1.689	0.068	2100	22.5	81.8
	1421	0.002	0.000	2274	29.7	316.4
Logan Glacier	1423	0.003	0.000	2213	23.4	38.3
	1424	0.015	0.002	2498	30.4	323.3
	1429	0.013	0.001	2771	30.8	85.6
	1431	0.470	0.047	2418	36.6	286.4
	1432	0.069	0.003	2789	45.5	165.1
	1433	0.031	0.003	2572	43.4	107.3
	1434	0.045	0.004	2221	26.3	298.2
	1444	0.160	0.016	2502	40.6	15.0
	1445	0.007	0.001	2336	35.5	319.3
	1448	0.990	0.040	2429	38.5	312.8
	1449	0.008	0.001	2523	32.3	350.1
	1454	0.008	0.001	2245	30.5	120.0
	1458	0.040	0.004	2280	25.8	133.4
	1459	0.093	0.009	2513	34.0	92.9
	1461	0.003	0.001	2267	22.2	135.5
Pumpelly Glacier	1466	0.036	0.004	2527	24.8	78.2
	1468	0.020	0.002	2165	23.6	64.2
	1471	0.010	0.001	2663	28.2	346.2
	1472	0.052	0.005	2527	29.6	333.7
	1473	0.014	0.001	2157	24.4	128.2
	1474	0.026	0.003	2168	6.1	95.7
	1479	0.004	0.000	2112	37.3	287.9

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1480	0.005	0.001	2181	30.4	358.8
	1482	0.004	0.000	2031	17.1	14.6
	1483	0.010	0.001	2330	44.1	354.9
	1484	0.013	0.001	2248	15.0	64.5
	1485	0.017	0.002	2813	42.2	103.4
	1486	0.011	0.001	2386	38.2	332.9
	1487	0.012	0.001	2481	34.8	175.3
	1567	0.001	0.000	1972	12.5	116.7
	1568	0.956	0.038	2270	28.9	73.8
	1569	0.418	0.042	2084	30.5	127.1
	1572	0.001	0.000	2446	21.4	10.9
	1573	0.004	0.000	1944	22.3	16.4
	1575	0.005	0.000	2183	24.6	2.7
	1576	0.023	0.002	2172	2.1	359.8
	1577	0.015	0.004	2191	19.5	346.3
	1578	0.001	0.000	2089	33.1	9.0
	1579	0.002	0.000	2334	26.8	351.0
	1584	0.023	0.002	2188	26.9	164.7
	1585	0.013	0.001	2258	43.4	74.5
	1587	0.012	0.001	2063	26.7	322.3
	1590	0.011	0.001	2719	26.8	121.8
Grant Glacier	1593	0.047	0.005	2412	21.1	71.4
	1594	0.013	0.001	2407	42.9	59.1
	1595	0.068	0.007	2107	41.1	64.2
	1598	0.015	0.001	2231	44.0	328.9
	1600	0.129	0.013	1947	2.9	325.1

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Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1011	0.016	0.001	2214	40.7	4.5
	1012	0.017	0.001	2404	30.0	37.1
Herbst Glacier	1013	0.051	0.002	2245	32.2	59.4
	1015	0.009	0.001	2459	41.3	45.7
	1016	0.003	0.000	2559	38.0	41.9

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Hudson Glacier	1029	0.046	0.002	2142	41.3	10.7
	1036	0.005	0.000	2346	47.8	12.9
Boulder Glacier	1041	0.060	0.002	2369	25.7	15.4
Harris Glacier	1044	0.040	0.003	1922	17.3	5.2
	1052	0.060	0.005	2101	24.4	44.1
Agassiz Glacier	1055	1.174	0.047	2376	13.6	66.0
	1061	0.001	0.000	2196	26.4	68.2
	1067	0.005	0.000	2364	8.1	318.4
	1068	0.065	0.003	2172	32.0	336.5
	1069	0.015	0.001	2117	40.1	338.7
	1071	0.042	0.003	2109	24.0	43.3
	1072	1.014	0.041	2579	17.1	13.6
	1073	0.165	0.007	2548	27.5	328.5
Miche Waburn	1074	0.102	0.008	2208	31.0	12.1
	1075	0.003	0.000	2215	31.5	31.3
	1077	0.021	0.002	2259	39.9	321.0
	1078	0.001	0.000	2415	9.2	0.5
	1079	0.013	0.001	2365	34.1	22.4
	1081	0.061	0.005	2378	31.2	327.1
	1084	0.158	0.006	2643	31.8	56.5
	1085	0.021	0.002	2207	28.0	62.5
	1086	0.017	0.001	2669	35.3	97.7
	1088	0.111	0.009	2120	18.3	13.4
	1089	0.132	0.005	2288	22.1	44.4
	1090	0.001	0.000	2430	43.7	91.1
	1091	0.066	0.005	2421	38.1	86.7
Thunderbird Glacier	1093	0.028	0.002	2411	38.5	352.6
	1094	0.184	0.007	2263	24.3	20.2
	1096	0.032	0.003	2334	23.0	327.9
Dixon Glacier	1101	0.003	0.000	2765	38.6	152.4
	1104	0.011	0.000	2875	47.8	95.6
	1105	0.013	0.001	2572	37.8	96.2
	1108	0.055	0.004	2133	32.0	128.1
	1114	0.008	0.000	2292	41.1	108.1
	1115	0.013	0.001	2073	33.9	106.7
	1118	0.154	0.006	2004	19.9	93.1
Baby Glacier	1120	0.080	0.006	2067	20.5	59.9
Weasel Collar	1126	0.525	0.021	2185	8.8	15.5
	1128	0.043	0.002	2590	37.7	42.5

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Carter Glaciers	1132	0.270	0.022	2359	18.9	40.3
	1135	0.009	0.001	2428	28.7	64.4
	1137	0.004	0.000	2596	32.7	185.5
	1138	0.008	0.001	2614	27.4	331.5
	1140	0.032	0.003	2512	26.6	164.6
Rainbow Glacier	1141	1.171	0.047	2495	11.2	96.4
	1143	0.020	0.002	2268	22.4	54.5
	1146	0.020	0.002	2479	37.2	38.5
	1147	0.001	0.000	2362	43.9	32.8
Old Sun Glacier	1156	0.378	0.015	2673	16.8	97.3
	1160	0.027	0.002	2221	30.1	102.3
Shepard Glacier	1164	0.113	0.009	2330	33.4	68.5
	1169	0.001	0.000	2981	35.9	59.8
	1178	0.002	0.000	2314	14.8	34.0
	1181	0.000	0.000	2223	29.4	110.0
Chaney Glacier	1185	0.428	0.017	2252	17.9	26.6
	1186	0.002	0.000	2046	35.2	25.1
Ipasha Glacier	1195	0.245	0.010	2288	20.8	26.8
	1197	0.001	0.000	2021	38.5	332.5
	1200	0.001	0.000	2111	45.9	354.7
Two Ocean Glacier	1201	0.290	0.012	2585	15.1	92.1
Ahern Glacier	1202	0.517	0.021	2489	12.0	85.2
	1204	0.001	0.000	2684	43.3	103.1
	1208	0.003	0.000	2410	31.7	306.8
	1209	0.017	0.001	2528	19.5	63.1
	1210	0.006	0.000	2666	35.0	72.8
	1214	0.002	0.000	2485	17.5	206.6
	1216	0.005	0.000	2644	31.0	125.4
	1218	0.001	0.000	2526	25.7	195.5
	1222	0.011	0.001	2502	22.7	186.4
Vulture Glacier	1224	0.352	0.014	2565	32.0	81.9
	1229	0.029	0.001	2703	33.3	142.8
	1230	0.005	0.000	2214	26.7	61.6
	1251	0.001	0.000	2070	6.7	67.6
	1253	0.051	0.002	2179	27.7	32.2
	1254	0.030	0.001	2115	43.9	14.5
	1255	0.009	0.001	2385	48.4	51.5
Swiftcurrent Glacier	1259	0.189	0.008	2231	40.6	28.1
	1260	0.005	0.000	2243	17.2	6.8

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Salamander Glacier	1261	0.046	0.002	2219	34.2	334.3
	1271	0.187	0.007	2196	16.6	107.0
Grinnell Glacier	1277	0.716	0.029	2025	7.4	14.2
Gem Glacier	1283	0.023	0.001	2511	38.6	36.0
	1284	0.059	0.002	2017	21.0	50.4
	1287	0.020	0.002	2646	42.4	356.7
	1288	0.026	0.002	1730	25.6	92.8
	1291	0.075	0.003	2166	16.9	94.8
Siyeh Glacier	1296	0.198	0.005	2106	18.5	17.0
Piegan Glacier	1323	0.274	0.011	2512	16.4	54.3
	1325	0.017	0.001	2471	45.2	128.1
Sexton Glacier	1329	0.306	0.012	2225	24.2	76.3
	1372	0.001	0.000	2293	19.4	357.8
	1381	0.001	0.000	2494	36.6	3.0
	1383	0.000	0.000	2550	44.0	323.6
Jackson Glacier	1414	0.964	0.039	2180	22.9	32.9
	1417	0.001	0.000	2100	22.5	81.8
	1420	0.003	0.000	2075	15.9	76.1
	1421	0.234	0.019	2274	29.7	316.4
Logan Glacier	1423	0.349	0.014	2213	23.4	38.3
	1428	0.016	0.001	2658	38.6	87.6
	1429	0.030	0.005	2771	30.8	85.6
Blackfoot Glacier	1430	1.548	0.062	2288	16.6	20.5
	1432	0.049	0.002	2789	45.5	165.1
	1433	0.007	0.001	2572	43.4	107.3
	1439	0.003	0.000	2597	46.8	168.0
	1441	0.117	0.005	2434	36.5	341.4
	1442	0.007	0.001	2481	34.9	59.6
	1443	0.335	0.027	2395	21.5	117.7
	1444	0.025	0.001	2502	40.6	15.0
Red Eagle Glacier	1447	0.094	0.008	2156	22.1	32.2
	1448	0.054	0.002	2429	38.5	312.8
	1449	0.009	0.001	2523	32.3	350.1
	1450	0.022	0.002	2223	21.1	133.5
	1452	0.002	0.000	2321	33.2	125.4
	1453	0.006	0.001	2454	35.1	170.8
	1454	0.001	0.000	2245	30.5	120.0
	1455	0.029	0.002	2373	20.8	148.0
	1456	0.004	0.000	2203	24.4	158.3

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Pumpelly Glacier	1457	0.120	0.005	2418	9.6	70.9
	1458	0.004	0.000	2280	25.8	133.4
	1459	0.003	0.000	2513	34.0	92.9
	1461	0.004	0.000	2267	22.2	135.5
	1462	0.010	0.002	2494	15.7	226.9
	1464	0.002	0.000	2157	24.1	148.3
	1465	0.007	0.001	2459	14.4	218.1
	1466	0.881	0.035	2527	24.8	78.2
	1468	0.014	0.001	2165	23.6	64.2
	1470	0.002	0.000	2055	18.0	163.3
	1471	0.033	0.003	2663	28.2	346.2
	1472	0.068	0.005	2527	29.6	333.7
	1473	0.043	0.003	2157	24.4	128.2
	1484	0.022	0.002	2248	15.0	64.5
	1485	0.012	0.001	2813	42.2	103.4
	1487	0.019	0.001	2481	34.8	175.3
	1489	0.003	0.000	2758	40.4	142.3
	1490	0.008	0.001	2349	33.7	48.6
	1492	0.016	0.001	1905	13.8	67.4
	1496	0.006	0.000	1852	14.1	57.1
Lupfer Glacier	1555	0.069	0.003	1868	30.6	94.9
	1588	0.268	0.011	2420	9.7	358.1
Sperry Glacier	1589	0.934	0.037	2384	14.3	3.0
Grant Glacier	1593	0.310	0.012	2412	21.1	71.4
	1594	0.001	0.000	2407	42.9	59.1
	1596	0.001	0.000	2424	10.3	353.7
Harrison Glacier	1601	1.382	0.055	2492	9.5	94.7
	1602	0.181	0.007	2203	15.7	92.9
	9980	0.190	0.008	2212	12.7	97.3

2003

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1004	0.023	0.003	2375	12.9	103.2
	1005	0.043	0.006	1994	27.6	34.2

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Herbst Glacier	1006	0.006	0.002	2096	27.5	327.1
	1011	0.008	0.002	2214	40.7	4.5
	1012	0.017	0.002	2404	30.0	37.1
	1013	0.042	0.003	2245	32.2	59.4
	1015	0.009	0.001	2459	41.3	45.7
	1016	0.009	0.001	2559	38.0	41.9
	1017	0.015	0.002	2311	40.9	332.2
	1021	0.115	0.015	1713	19.8	49.6
Hudson Glacier	1024	0.057	0.017	2293	25.3	352.5
	1025	0.012	0.003	1647	35.2	344.2
	1026	0.176	0.023	2443	42.2	356.2
	1027	0.018	0.002	2352	42.2	342.1
	1029	0.039	0.005	2142	41.3	10.7
	1031	0.001	0.000	2139	28.5	354.9
	1033	0.004	0.001	2301	46.0	1.5
	1035	0.014	0.004	1943	30.4	75.3
Boulder Glacier	1036	0.005	0.001	2346	47.8	12.9
	1038	0.003	0.001	2137	45.1	64.2
	1041	0.040	0.005	2369	25.7	15.4
	1043	0.007	0.000	2438	32.4	27.0
Harris Glacier	1044	0.040	0.005	1922	17.3	5.2
Agassiz Glacier	1052	0.013	0.004	2101	24.4	44.1
	1054	0.002	0.000	2085	27.8	331.3
	1055	1.008	0.060	2376	13.6	66.0
	1059	0.004	0.000	2084	28.2	350.3
Miche Waburn	1060	0.149	0.019	2127	31.8	32.5
	1065	0.001	0.000	2195	40.1	6.1
	1066	0.002	0.000	2246	39.8	336.6
	1067	0.005	0.001	2364	8.1	318.4
	1068	0.060	0.018	2172	32.0	336.5
	1069	0.012	0.004	2117	40.1	338.7
	1071	0.046	0.006	2109	24.0	43.3
	1073	0.153	0.020	2548	27.5	328.5
	1074	0.114	0.007	2208	31.0	12.1
	1075	0.003	0.000	2215	31.5	31.3
	1077	0.015	0.002	2259	39.9	321.0
	1079	0.018	0.002	2365	34.1	22.4
	1081	0.040	0.005	2378	31.2	327.1
	1082	0.003	0.000	2507	30.0	10.8

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Thunderbird Glacier	1085	0.015	0.002	2207	28.0	62.5
	1086	0.016	0.002	2669	35.3	97.7
	1088	0.074	0.010	2120	18.3	13.4
	1089	0.125	0.007	2288	22.1	44.4
	1090	0.002	0.001	2430	43.7	91.1
	1091	0.066	0.009	2421	38.1	86.7
	1093	0.028	0.004	2411	38.5	352.6
Dixon Glacier	1094	0.173	0.010	2263	24.3	20.2
	1095	0.004	0.001	2239	34.3	309.9
	1096	0.024	0.003	2334	23.0	327.9
	1097	0.050	0.003	1890	24.5	102.9
	1098	0.004	0.001	2053	38.8	350.0
	1099	0.008	0.001	2033	33.1	278.8
	1102	0.048	0.014	2022	41.4	354.2
Whitecrow Glacier	1103	0.002	0.000	1997	60.9	274.6
	1105	0.014	0.002	2572	37.8	96.2
	1108	0.050	0.007	2133	32.0	128.1
	1114	0.012	0.002	2292	41.1	108.1
	1115	0.014	0.002	2073	33.9	106.7
	1118	0.127	0.008	2004	19.9	93.1
	1120	0.078	0.005	2067	20.5	59.9
Baby Glacier	1122	0.002	0.000	2136	26.9	159.1
	1123	0.002	0.000	2374	43.1	68.6
	1125	0.004	0.001	2267	35.7	135.6
	1126	0.507	0.030	2185	8.8	15.5
	1128	0.048	0.003	2590	37.7	42.5
	1129	0.005	0.002	1790	25.1	1.8
	1130	0.012	0.002	2245	30.5	92.4
Carter Glaciers	1131	0.037	0.005	1899	32.6	354.4
	1132	0.224	0.013	2359	18.9	40.3
	1133	0.012	0.002	2270	27.3	109.2
	1135	0.012	0.002	2428	28.7	64.4
	1137	0.003	0.000	2596	32.7	185.5
	1138	0.012	0.004	2614	27.4	331.5
	1140	0.017	0.002	2512	26.6	164.6
Rainbow Glacier	1141	1.095	0.066	2495	11.2	96.4
	1143	0.012	0.002	2268	22.4	54.5
	1144	0.007	0.001	2238	28.1	85.7

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1146	0.021	0.003	2479	37.2	38.5
	1148	0.015	0.002	2185	20.2	18.7
Carter Glaciers	1151	0.045	0.006	2198	17.7	94.7
Old Sun Glacier	1156	0.367	0.022	2673	16.8	97.3
	1157	0.038	0.005	2242	32.8	359.1
	1160	0.010	0.001	2221	30.1	102.3
Shepard Glacier	1164	0.107	0.006	2330	33.4	68.5
	1168	0.007	0.001	2217	4.4	8.9
	1169	0.003	0.000	2981	35.9	59.8
	1171	0.003	0.000	2355	23.3	85.0
	1172	0.190	0.025	1738	25.4	56.9
	1176	0.061	0.008	2333	40.3	354.9
	1178	0.003	0.000	2314	14.8	34.0
Chaney Glacier	1185	0.410	0.025	2252	17.9	26.6
	1186	0.004	0.001	2046	35.2	25.1
	1189	0.009	0.001	2122	42.1	316.4
	1190	0.090	0.005	2149	29.0	57.6
	1191	0.002	0.000	2178	38.2	275.1
	1193	0.012	0.002	2735	47.0	126.7
	1194	0.001	0.000	2103	38.8	18.3
Ipasha Glacier	1195	0.217	0.013	2288	20.8	26.8
	1196	0.011	0.001	2038	30.3	30.0
	1197	0.001	0.000	2021	38.5	332.5
	1199	0.026	0.003	2492	29.8	297.0
	1200	0.001	0.000	2111	45.9	354.7
Two Ocean Glacier	1201	0.258	0.015	2585	15.1	92.1
Ahern Glacier	1202	0.510	0.031	2489	12.0	85.2
	1203	0.004	0.001	2197	38.6	142.0
	1204	0.002	0.000	2684	43.3	103.1
	1208	0.004	0.000	2410	31.7	306.8
	1210	0.003	0.000	2666	35.0	72.8
	1212	0.002	0.000	2267	25.0	68.3
	1216	0.001	0.000	2644	31.0	125.4
	1218	0.001	0.000	2526	25.7	195.5
	1219	0.018	0.002	2475	18.6	4.8
	1222	0.004	0.000	2502	22.7	186.4
Vulture Glacier	1224	0.335	0.020	2565	32.0	81.9
	1227	0.101	0.013	1785	31.5	74.5
	1229	0.034	0.004	2703	33.3	142.8

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1230	0.002	0.000	2214	26.7	61.6
	1231	0.032	0.004	1730	21.0	17.5
	1236	0.001	0.000	2269	30.2	142.9
	1238	0.020	0.003	2089	48.5	340.0
	1243	0.004	0.001	2090	44.6	110.3
	1250	0.013	0.002	2255	37.0	99.6
	1253	0.057	0.007	2179	27.7	32.2
	1254	0.029	0.004	2115	43.9	14.5
	1255	0.011	0.003	2385	48.4	51.5
	1256	0.019	0.002	1976	26.5	30.4
	1257	0.014	0.001	2258	22.6	93.4
	1258	0.009	0.001	2172	13.5	52.0
Swiftcurrent Glacier	1259	0.190	0.011	2231	40.6	28.1
	1260	0.007	0.001	2243	17.2	6.8
	1261	0.048	0.003	2219	34.2	334.3
Salamander Glacier	1271	0.173	0.010	2196	16.6	107.0
Grinnell Glacier	1277	0.674	0.040	2025	7.4	14.2
	1356	0.005	0.000	2385	12.0	6.7
	1360	0.005	0.001	2343	39.3	11.5
	1363	0.003	0.000	1921	57.6	28.4
	1367	0.006	0.001	2392	26.9	359.9
	1368	0.001	0.000	2520	37.5	60.2
	1372	0.001	0.000	2293	19.4	357.8
	1381	0.002	0.000	2494	36.6	3.0
	1386	0.013	0.004	2373	25.8	65.4
	1388	0.060	0.008	2403	32.0	104.8
	1389	0.005	0.001	2166	29.3	109.9
	1394	0.002	0.000	2173	29.1	111.3
	1395	0.035	0.005	2284	28.6	89.6
	1396	0.010	0.001	2463	39.3	266.4
	1397	0.013	0.002	2498	31.5	64.6
	1398	0.010	0.003	2192	41.5	10.2
	1399	0.008	0.001	2129	30.2	28.6
	1400	0.001	0.000	2392	36.9	140.8
	1401	0.001	0.000	2488	29.9	52.5
	1402	0.014	0.002	2276	28.7	157.3
	1403	0.012	0.003	2284	22.3	297.5
	1404	0.002	0.000	2010	28.8	51.0
	1406	0.005	0.001	2190	26.8	61.5

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Jackson Glacier	1407	0.002	0.000	2048	19.5	66.5
	1409	0.007	0.001	2255	34.7	149.1
	1411	0.001	0.000	2219	29.5	64.4
	1413	0.068	0.009	2479	45.5	6.8
	1414	0.960	0.058	2180	22.9	32.9
	1417	0.002	0.000	2100	22.5	81.8
	1419	0.067	0.004	2399	31.0	322.6
	1420	0.003	0.000	2075	15.9	76.1
Logan Glacier	1421	0.239	0.031	2274	29.7	316.4
	1423	0.309	0.040	2213	23.4	38.3
	1424	0.159	0.021	2498	30.4	323.3
	1426	0.002	0.000	2337	42.2	351.0
	1428	0.016	0.002	2658	38.6	87.6
	1429	0.024	0.007	2771	30.8	85.6
Blackfoot Glacier	1430	1.525	0.091	2288	16.6	20.5
	1431	0.022	0.001	2418	36.6	286.4
	1432	0.050	0.007	2789	45.5	165.1
	1433	0.011	0.001	2572	43.4	107.3
	1436	0.002	0.000	2286	35.0	280.3
	1437	0.007	0.001	2023	38.3	300.9
	1439	0.005	0.001	2597	46.8	168.0
	1441	0.112	0.014	2434	36.5	341.4
	1442	0.011	0.001	2481	34.9	59.6
	1443	0.285	0.037	2395	21.5	117.7
Red Eagle Glacier	1444	0.023	0.003	2502	40.6	15.0
	1445	0.040	0.005	2336	35.5	319.3
	1446	0.002	0.000	2289	26.6	227.5
	1447	0.076	0.010	2156	22.1	32.2
	1448	0.057	0.007	2429	38.5	312.8
	1449	0.010	0.001	2523	32.3	350.1
	1450	0.005	0.001	2223	21.1	133.5
	1452	0.002	0.000	2321	33.2	125.4
	1453	0.004	0.001	2454	35.1	170.8
	1454	0.000	0.000	2245	30.5	120.0
	1455	0.022	0.003	2373	20.8	148.0
	1456	0.002	0.000	2203	24.4	158.3
	1457	0.093	0.012	2418	9.6	70.9
	1458	0.003	0.000	2280	25.8	133.4
	1459	0.003	0.000	2513	34.0	92.9

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1460	0.003	0.000	2312	13.5	113.8
	1461	0.002	0.000	2267	22.2	135.5
	1462	0.003	0.000	2494	15.7	226.9
	1463	0.002	0.000	2260	34.6	209.9
	1464	0.001	0.000	2157	24.1	148.3
Pumpelly Glacier	1466	0.865	0.052	2527	24.8	78.2
	1468	0.013	0.002	2165	23.6	64.2
	1470	0.005	0.001	2055	18.0	163.3
	1472	0.076	0.010	2527	29.6	333.7
	1473	0.028	0.004	2157	24.4	128.2
	1484	0.008	0.001	2248	15.0	64.5
	1487	0.026	0.003	2481	34.8	175.3
	1489	0.009	0.001	2758	40.4	142.3
	1490	0.007	0.001	2349	33.7	48.6
	1492	0.012	0.002	1905	13.8	67.4
	1493	0.017	0.002	2337	34.2	131.8
	1494	0.020	0.003	2076	23.6	150.8
	1495	0.014	0.002	2173	35.4	138.3
	1496	0.009	0.001	1852	14.1	57.1
	1498	0.001	0.000	2182	26.8	108.7
	1500	0.002	0.000	2171	21.3	90.4
	1502	0.006	0.001	2251	32.2	63.9
	1503	0.008	0.001	2514	30.0	86.8
	1504	0.007	0.000	2398	26.2	64.1
	1505	0.007	0.001	2649	18.9	77.3
	1588	0.220	0.013	2420	9.7	358.1
Sperry Glacier	1589	0.864	0.052	2384	14.3	3.0
Stanton Glacier	1592	0.301	0.039	2505	19.3	42.5
Grant Glacier	1593	0.281	0.036	2412	21.1	71.4
	1594	0.001	0.000	2407	42.9	59.1
	1596	0.001	0.000	2424	10.3	353.7
Harrison Glacier	1601	1.335	0.080	2492	9.5	94.7
	1602	0.181	0.011	2203	15.7	92.9
	9980	0.180	0.011	2212	12.7	97.3

2005

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Herbst Glacier	1004	0.046	0.004	2375	12.9	103.2
	1005	0.042	0.004	1994	27.6	34.2
	1006	0.000	0.000	2096	27.5	327.1
	1011	0.007	0.001	2214	40.7	4.5
	1012	0.021	0.002	2404	30.0	37.1
	1013	0.040	0.004	2245	32.2	59.4
	1015	0.025	0.002	2459	41.3	45.7
	1016	0.022	0.002	2559	38.0	41.9
	1017	0.021	0.002	2311	40.9	332.2
	1021	0.101	0.009	1713	19.8	49.6
	1023	0.021	0.002	2173	20.9	63.7
	1024	0.059	0.005	2293	25.3	352.5
	1025	0.004	0.000	1647	35.2	344.2
	1026	0.179	0.016	2443	42.2	356.2
Hudson Glacier	1027	0.020	0.002	2352	42.2	342.1
	1028	0.005	0.000	1905	45.9	15.6
	1029	0.057	0.005	2142	41.3	10.7
	1031	0.014	0.001	2139	28.5	354.9
	1033	0.015	0.001	2301	46.0	1.5
	1035	0.005	0.000	1943	30.4	75.3
	1036	0.006	0.001	2346	47.8	12.9
	1038	0.003	0.000	2137	45.1	64.2
	1040	0.014	0.001	2076	38.2	80.2
	1041	0.060	0.005	2369	25.7	15.4
Boulder Glacier	1042	0.018	0.002	2470	21.5	318.4
	1043	0.006	0.001	2438	32.4	27.0
	1044	0.033	0.003	1922	17.3	5.2
	1045	0.100	0.009	2257	29.0	48.3
Harris Glacier	1049	0.056	0.005	2172	9.9	44.5
	1050	0.018	0.002	2766	34.2	21.8
Agassiz Glacier	1052	0.062	0.006	2101	24.4	44.1
	1054	0.002	0.000	2085	27.8	331.3
	1055	1.101	0.099	2376	13.6	66.0
	1059	0.006	0.001	2084	28.2	350.3
	1060	0.152	0.014	2127	31.8	32.5
	1065	0.008	0.001	2195	40.1	6.1
	1066	0.006	0.001	2246	39.8	336.6
	1067	0.003	0.000	2364	8.1	318.4
	1068	0.063	0.006	2172	32.0	336.5

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Kintla Glacier	1069	0.010	0.001	2117	40.1	338.7
	1071	0.022	0.002	2109	24.0	43.3
	1072	1.021	0.092	2579	17.1	13.6
	1073	0.175	0.016	2548	27.5	328.5
Miche Waburn	1074	0.113	0.010	2208	31.0	12.1
	1075	0.004	0.000	2215	31.5	31.3
	1076	0.007	0.001	2304	49.2	14.5
	1077	0.019	0.002	2259	39.9	321.0
Thunderbird Glacier	1079	0.020	0.002	2365	34.1	22.4
	1081	0.048	0.004	2378	31.2	327.1
	1082	0.003	0.000	2507	30.0	10.8
	1084	0.137	0.012	2643	31.8	56.5
	1085	0.027	0.002	2207	28.0	62.5
	1086	0.019	0.002	2669	35.3	97.7
	1087	0.021	0.002	2264	36.9	1.4
	1088	0.127	0.011	2120	18.3	13.4
	1089	0.127	0.011	2288	22.1	44.4
	1090	0.003	0.000	2430	43.7	91.1
	1091	0.076	0.007	2421	38.1	86.7
	1093	0.029	0.003	2411	38.5	352.6
Dixon Glacier	1094	0.186	0.017	2263	24.3	20.2
	1095	0.008	0.001	2239	34.3	309.9
	1096	0.027	0.002	2334	23.0	327.9
	1097	0.057	0.005	1890	24.5	102.9
	1098	0.007	0.001	2053	38.8	350.0
	1099	0.010	0.001	2033	33.1	278.8
	1102	0.036	0.003	2022	41.4	354.2
	1103	0.002	0.000	1997	60.9	274.6
	1104	0.014	0.001	2875	47.8	95.6
	1105	0.018	0.002	2572	37.8	96.2
	1106	0.013	0.001	3109	50.8	110.6
	1108	0.045	0.004	2133	32.0	128.1
	1109	0.045	0.004	2030	25.9	24.0
	1110	0.146	0.013	2400	31.7	6.9
	1112	0.006	0.001	2129	42.2	343.3
	1113	0.011	0.001	2270	36.3	18.8
	1114	0.012	0.001	2292	41.1	108.1
	1115	0.017	0.002	2073	33.9	106.7
	1117	0.007	0.001	2477	47.6	41.2

Glacier Name	RECNO	Area (km²)	Uncert (km²)	Mean Elevation	Slope	Aspect
Whitecrow Glacier	1118	0.157	0.014	2004	19.9	93.1
	1119	0.013	0.001	2518	52.2	1.7
Baby Glacier	1120	0.078	0.007	2067	20.5	59.9
	1122	0.002	0.000	2136	26.9	159.1
	1123	0.004	0.000	2374	43.1	68.6
	1125	0.004	0.000	2267	35.7	135.6
Weasel Collar Glacier	1126	0.506	0.046	2185	8.8	15.5
	1127	0.028	0.002	2296	20.8	346.7
	1128	0.048	0.004	2590	37.7	42.5
	1129	0.016	0.001	1790	25.1	1.8
	1130	0.020	0.002	2245	30.5	92.4
	1131	0.037	0.003	1899	32.6	354.4
Carter Glaciers	1132	0.245	0.022	2359	18.9	40.3
	1133	0.022	0.002	2270	27.3	109.2
	1134	0.032	0.003	1970	26.2	342.3
	1135	0.016	0.001	2428	28.7	64.4
	1137	0.004	0.000	2596	32.7	185.5
	1138	0.009	0.001	2614	27.4	331.5
	1140	0.040	0.004	2512	26.6	164.6
Rainbow Glacier	1141	1.144	0.103	2495	11.2	96.4
	1143	0.022	0.002	2268	22.4	54.5
	1144	0.026	0.002	2238	28.1	85.7
	1146	0.030	0.003	2479	37.2	38.5
	1148	0.017	0.001	2185	20.2	18.7
	1149	0.007	0.001	2198	34.2	16.6
	1150	0.213	0.019	2316	20.8	70.2
Carter Glaciers	1151	0.062	0.006	2198	17.7	94.7
	1152	0.015	0.001	2164	23.6	33.1
	1154	0.006	0.001	2128	44.7	357.2
	1155	0.064	0.006	2345	28.8	346.1
Old Sun Glacier	1156	0.383	0.034	2673	16.8	97.3
	1157	0.041	0.004	2242	32.8	359.1
	1160	0.022	0.002	2221	30.1	102.3
	1163	0.002	0.000	2908	43.6	12.5
Shepard Glacier	1164	0.107	0.010	2330	33.4	68.5
	1168	0.008	0.001	2217	4.4	8.9
	1169	0.003	0.000	2981	35.9	59.8
	1171	0.003	0.000	2355	23.3	85.0

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Chaney Glacier	1172	0.179	0.016	1738	25.4	56.9
	1176	0.068	0.006	2333	40.3	354.9
	1178	0.005	0.000	2314	14.8	34.0
	1183	0.003	0.000	2214	50.1	357.7
	1185	0.392	0.035	2252	17.9	26.6
	1186	0.003	0.000	2046	35.2	25.1
	1189	0.011	0.001	2122	42.1	316.4
	1190	0.078	0.007	2149	29.0	57.6
	1191	0.002	0.000	2178	38.2	275.1
	1192	0.005	0.000	2071	40.6	7.3
	1193	0.013	0.001	2735	47.0	126.7
	1194	0.001	0.000	2103	38.8	18.3
Ipasha Glacier	1195	0.227	0.020	2288	20.8	26.8
	1196	0.015	0.001	2038	30.3	30.0
	1197	0.003	0.000	2021	38.5	332.5
	1199	0.038	0.003	2492	29.8	297.0
Two Ocean Glacier	1200	0.002	0.000	2111	45.9	354.7
	1201	0.278	0.025	2585	15.1	92.1
Ahern Glacier	1202	0.512	0.046	2489	12.0	85.2
	1203	0.003	0.000	2197	38.6	142.0
	1204	0.003	0.000	2684	43.3	103.1
	1208	0.005	0.000	2410	31.7	306.8
	1210	0.007	0.001	2666	35.0	72.8
	1212	0.009	0.001	2267	25.0	68.3
	1216	0.013	0.001	2644	31.0	125.4
	1218	0.003	0.000	2526	25.7	195.5
Vulture Glacier	1219	0.024	0.002	2475	18.6	4.8
	1222	0.010	0.001	2502	22.7	186.4
	1224	0.331	0.030	2565	32.0	81.9
	1227	0.098	0.009	1785	31.5	74.5
	1228	0.016	0.001	1971	44.0	6.8
	1229	0.034	0.003	2703	33.3	142.8
	1230	0.007	0.001	2214	26.7	61.6
	1231	0.039	0.003	1730	21.0	17.5
	1236	0.005	0.000	2269	30.2	142.9
	1237	0.010	0.001	2284	30.1	30.0
	1238	0.018	0.002	2089	48.5	340.0
	1239	0.007	0.001	1975	33.3	136.7
	1240	0.033	0.003	1878	9.7	78.0

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1242	0.005	0.000	2191	19.4	19.0
	1243	0.004	0.000	2090	44.6	110.3
	1246	0.021	0.002	2035	38.3	62.7
	1248	0.012	0.001	2178	14.4	46.9
	1249	0.099	0.009	2084	31.9	40.3
	1250	0.019	0.002	2255	37.0	99.6
	1253	0.057	0.005	2179	27.7	32.2
	1254	0.031	0.003	2115	43.9	14.5
	1255	0.013	0.001	2385	48.4	51.5
	1256	0.016	0.001	1976	26.5	30.4
	1257	0.024	0.002	2258	22.6	93.4
	1258	0.024	0.002	2172	13.5	52.0
Swiftcurrent Glacier	1259	0.178	0.016	2231	40.6	28.1
	1260	0.007	0.001	2243	17.2	6.8
	1261	0.046	0.004	2219	34.2	334.3
	1262	0.001	0.000	2048	6.2	335.8
	1263	0.003	0.000	2304	37.4	65.8
	1264	0.010	0.001	2120	28.5	338.3
	1266	0.040	0.004	2294	18.9	6.5
	1268	0.023	0.002	2097	23.3	45.6
	1269	0.001	0.000	2243	30.3	154.5
	1270	0.004	0.000	2211	20.9	39.9
Salamander Glacier	1271	0.183	0.016	2196	16.6	107.0
	1272	0.004	0.000	2471	41.2	34.7
	1274	0.010	0.001	2390	46.1	349.7
	1276	0.001	0.000	2172	39.7	84.2
Grinnell Glacier	1277	0.616	0.055	2025	7.4	14.2
	1278	0.011	0.001	2635	41.1	65.6
	1280	0.017	0.002	2220	34.8	359.8
	1281	0.003	0.000	2058	39.4	276.3
	1282	0.013	0.001	2379	36.6	144.7
Gem Glacier	1283	0.027	0.002	2511	38.6	36.0
	1284	0.060	0.005	2017	21.0	50.4
	1285	0.045	0.004	1977	43.7	329.5
	1286	0.006	0.001	2146	35.2	92.3
	1287	0.022	0.002	2646	42.4	356.7
	1288	0.044	0.004	1730	25.6	92.8
	1289	0.008	0.001	1837	33.7	341.1
	1290	0.010	0.001	2110	25.6	341.7

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Siyeh Glacier	1291	0.074	0.007	2166	16.9	94.8
	1292	0.002	0.000	2144	26.0	98.4
	1293	0.008	0.001	2252	38.9	356.7
	1294	0.001	0.000	2117	49.4	30.1
	1296	0.211	0.019	2106	18.5	17.0
	1297	0.002	0.000	2162	42.2	7.3
	1298	0.003	0.000	2205	37.9	8.3
	1299	0.002	0.000	2270	48.6	4.6
	1300	0.004	0.000	2639	39.0	99.5
	1301	0.002	0.000	2420	39.3	133.9
	1302	0.012	0.001	2325	35.6	97.1
	1303	0.015	0.001	2039	42.7	64.3
	1304	0.005	0.000	2036	26.1	71.0
	1305	0.069	0.006	1974	20.4	27.3
	1306	0.012	0.001	2021	20.4	327.5
	1307	0.003	0.000	2326	33.0	107.8
	1308	0.113	0.010	2118	24.6	35.0
	1310	0.015	0.001	2307	27.3	40.4
	1311	0.001	0.000	2222	16.8	144.9
	1312	0.013	0.001	2272	30.0	353.4
Piegan Glacier	1313	0.033	0.003	2323	30.9	117.4
	1314	0.002	0.000	2511	39.7	64.0
	1315	0.025	0.002	2214	21.3	93.1
	1317	0.014	0.001	2207	35.7	356.3
	1318	0.032	0.003	2618	23.1	37.0
	1319	0.018	0.002	2315	27.5	10.4
	1320	0.007	0.001	2466	23.6	93.1
	1321	0.015	0.001	2181	35.7	78.0
	1322	0.011	0.001	2340	24.4	151.5
	1323	0.261	0.024	2512	16.4	54.3
Sexton Glacier	1324	0.002	0.000	2205	11.7	146.5
	1325	0.018	0.002	2471	45.2	128.1
	1326	0.079	0.007	2071	21.0	94.6
	1329	0.370	0.033	2225	24.2	76.3
	1330	0.024	0.002	2171	27.1	64.7
	1332	0.025	0.002	2348	39.3	113.4
	1333	0.008	0.001	2142	40.5	123.4
	1334	0.007	0.001	2089	41.1	359.0
	1335	0.014	0.001	2414	30.2	51.6

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1336	0.006	0.001	1728	28.2	357.5
	1337	0.012	0.001	2547	43.5	9.0
	1338	0.019	0.002	2189	24.5	58.1
	1339	0.057	0.005	2013	31.1	8.7
	1340	0.049	0.004	2096	23.7	345.6
	1341	0.009	0.001	2123	26.7	49.5
	1343	0.048	0.004	2240	26.9	113.0
	1344	0.002	0.000	2257	36.5	47.4
	1345	0.003	0.000	2204	23.7	28.9
	1346	0.006	0.001	2058	26.8	4.4
	1347	0.039	0.004	2357	34.2	358.4
	1349	0.002	0.000	2062	48.3	359.1
	1352	0.079	0.007	2624	41.4	36.3
	1353	0.052	0.005	2275	25.7	76.2
	1354	0.002	0.000	2234	27.3	96.4
	1355	0.003	0.000	2556	17.4	86.1
	1356	0.005	0.000	2385	12.0	6.7
	1357	0.014	0.001	2399	40.5	134.3
	1360	0.010	0.001	2343	39.3	11.5
	1361	0.085	0.008	2076	34.5	38.5
	1362	0.105	0.009	2132	23.5	56.5
	1363	0.003	0.000	1921	57.6	28.4
	1367	0.010	0.001	2392	26.9	359.9
	1368	0.003	0.000	2520	37.5	60.2
	1370	0.004	0.000	2210	36.8	4.0
	1372	0.008	0.001	2293	19.4	357.8
	1373	0.008	0.001	2362	27.4	94.9
	1374	0.003	0.000	2333	22.9	152.4
	1375	0.061	0.005	2460	26.1	109.8
	1376	0.009	0.001	2198	36.9	24.2
	1378	0.024	0.002	2370	49.9	24.2
	1379	0.227	0.020	2340	8.0	72.4
	1380	0.032	0.003	2510	38.0	118.0
	1381	0.002	0.000	2494	36.6	3.0
	1384	0.109	0.010	2414	23.1	35.6
	1385	0.006	0.001	2053	31.4	41.9
	1386	0.021	0.002	2373	25.8	65.4
	1387	0.003	0.000	2353	33.1	88.1
	1388	0.067	0.006	2403	32.0	104.8

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1389	0.009	0.001	2166	29.3	109.9
	1390	0.008	0.001	2354	37.4	46.5
	1391	0.017	0.002	2354	38.6	23.0
	1392	0.024	0.002	2246	36.5	12.0
	1393	0.019	0.002	2463	31.2	7.4
	1394	0.003	0.000	2173	29.1	111.3
	1395	0.039	0.004	2284	28.6	89.6
	1396	0.012	0.001	2463	39.3	266.4
	1397	0.009	0.001	2498	31.5	64.6
	1398	0.024	0.002	2192	41.5	10.2
	1399	0.008	0.001	2129	30.2	28.6
	1400	0.006	0.001	2392	36.9	140.8
	1401	0.003	0.000	2488	29.9	52.5
	1402	0.017	0.002	2276	28.7	157.3
	1403	0.022	0.002	2284	22.3	297.5
	1404	0.003	0.000	2010	28.8	51.0
	1406	0.006	0.001	2190	26.8	61.5
	1407	0.005	0.000	2048	19.5	66.5
	1409	0.009	0.001	2255	34.7	149.1
	1411	0.004	0.000	2219	29.5	64.4
	1413	0.070	0.006	2479	45.5	6.8
Jackson Glacier	1414	0.999	0.090	2180	22.9	32.9
	1417	0.002	0.000	2100	22.5	81.8
	1419	0.082	0.007	2399	31.0	322.6
	1420	0.008	0.001	2075	15.9	76.1
	1421	0.231	0.021	2274	29.7	316.4
Logan Glacier	1423	0.317	0.029	2213	23.4	38.3
	1424	0.166	0.015	2498	30.4	323.3
	1426	0.002	0.000	2337	42.2	351.0
	1428	0.014	0.001	2658	38.6	87.6
	1429	0.026	0.002	2771	30.8	85.6
Blackfoot Glacier	1430	1.559	0.140	2288	16.6	20.5
	1431	0.021	0.002	2418	36.6	286.4
	1432	0.050	0.005	2789	45.5	165.1
	1433	0.010	0.001	2572	43.4	107.3
	1435	0.099	0.009	2136	22.4	12.1
	1436	0.003	0.000	2286	35.0	280.3
	1437	0.005	0.000	2023	38.3	300.9
	1439	0.004	0.000	2597	46.8	168.0

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Red Eagle Glacier	1441	0.106	0.010	2434	36.5	341.4
	1442	0.012	0.001	2481	34.9	59.6
	1443	0.302	0.027	2395	21.5	117.7
	1444	0.025	0.002	2502	40.6	15.0
	1445	0.039	0.003	2336	35.5	319.3
	1446	0.002	0.000	2289	26.6	227.5
	1447	0.117	0.011	2156	22.1	32.2
	1448	0.057	0.005	2429	38.5	312.8
	1449	0.010	0.001	2523	32.3	350.1
	1450	0.011	0.001	2223	21.1	133.5
	1452	0.001	0.000	2321	33.2	125.4
	1453	0.006	0.001	2454	35.1	170.8
	1454	0.001	0.000	2245	30.5	120.0
	1455	0.028	0.002	2373	20.8	148.0
	1456	0.004	0.000	2203	24.4	158.3
	1457	0.096	0.009	2418	9.6	70.9
	1458	0.004	0.000	2280	25.8	133.4
	1459	0.005	0.000	2513	34.0	92.9
	1460	0.005	0.000	2312	13.5	113.8
	1461	0.003	0.000	2267	22.2	135.5
Pumpelly Glacier	1462	0.008	0.001	2494	15.7	226.9
	1463	0.001	0.000	2260	34.6	209.9
	1464	0.004	0.000	2157	24.1	148.3
	1466	0.893	0.080	2527	24.8	78.2
	1468	0.017	0.002	2165	23.6	64.2
	1469	0.002	0.000	2209	9.4	122.9
	1470	0.004	0.000	2055	18.0	163.3
	1472	0.070	0.006	2527	29.6	333.7
	1473	0.026	0.002	2157	24.4	128.2
	1474	0.002	0.000	2168	6.1	95.7
	1476	0.110	0.010	2212	20.2	31.1
	1477	0.030	0.003	2140	16.6	31.3
	1478	0.006	0.001	1839	48.7	350.2
	1479	0.029	0.003	2112	37.3	287.9
	1480	0.075	0.007	2181	30.4	358.8
	1481	0.005	0.000	2059	33.9	72.3
	1482	0.069	0.006	2031	17.1	14.6
	1483	0.003	0.000	2330	44.1	354.9
	1484	0.008	0.001	2248	15.0	64.5

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1485	0.015	0.001	2813	42.2	103.4
	1486	0.006	0.001	2386	38.2	332.9
	1487	0.021	0.002	2481	34.8	175.3
	1488	0.025	0.002	2256	36.9	66.6
	1489	0.006	0.001	2758	40.4	142.3
	1490	0.007	0.001	2349	33.7	48.6
	1491	0.075	0.007	2089	9.6	1.0
	1492	0.011	0.001	1905	13.8	67.4
	1493	0.017	0.001	2337	34.2	131.8
	1494	0.024	0.002	2076	23.6	150.8
	1495	0.014	0.001	2173	35.4	138.3
	1496	0.007	0.001	1852	14.1	57.1
	1498	0.002	0.000	2182	26.8	108.7
	1500	0.003	0.000	2171	21.3	90.4
	1502	0.006	0.001	2251	32.2	63.9
	1503	0.012	0.001	2514	30.0	86.8
	1504	0.009	0.001	2398	26.2	64.1
	1505	0.010	0.001	2649	18.9	77.3
	1506	0.086	0.008	2222	24.9	18.3
	1507	0.007	0.001	2555	28.3	117.6
	1508	0.008	0.001	2472	30.9	122.5
	1509	0.008	0.001	2260	8.2	138.1
	1510	0.025	0.002	1986	28.2	16.6
	1511	0.003	0.000	2393	30.0	112.6
	1512	0.004	0.000	2000	40.1	329.5
	1513	0.068	0.006	2262	25.6	79.5
	1514	0.033	0.003	2388	18.2	81.8
	1515	0.099	0.009	2211	16.9	30.8
	1516	0.032	0.003	2356	9.3	66.3
	1517	0.015	0.001	2170	47.9	354.7
	1518	0.073	0.007	2117	14.8	61.3
	1519	0.003	0.000	2332	25.7	333.3
	1520	0.006	0.001	2285	28.7	122.4
	1521	0.003	0.000	2339	42.1	342.0
	1522	0.005	0.000	1846	36.3	128.3
	1523	0.015	0.001	2294	29.4	75.5
	1524	0.006	0.001	2291	28.1	44.3
	1525	0.032	0.003	2269	16.8	26.6
	1526	0.032	0.003	1860	23.9	23.9

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1527	0.006	0.000	2341	47.9	7.5
	1528	0.011	0.001	2210	30.1	79.0
	1529	0.008	0.001	2428	49.0	4.0
	1530	0.007	0.001	2484	42.6	5.2
	1531	0.016	0.001	1900	22.1	67.3
	1532	0.009	0.001	2312	26.7	60.5
	1533	0.011	0.001	2717	40.1	45.2
	1534	0.222	0.020	2022	8.0	51.5
	1535	0.030	0.003	1992	45.6	325.0
	1536	0.034	0.003	2073	14.5	37.6
	1537	0.002	0.000	1993	12.7	56.9
	1538	0.017	0.002	2019	34.8	61.3
	1539	0.012	0.001	1757	25.7	66.1
	1540	0.039	0.003	1927	28.0	51.2
	1541	0.015	0.001	1760	30.8	354.9
	1542	0.001	0.000	2034	49.3	26.4
	1543	0.113	0.010	2016	44.9	21.2
	1544	0.022	0.002	2340	63.5	33.8
	1545	0.009	0.001	2197	38.4	332.4
	1546	0.006	0.001	2309	42.7	342.9
	1547	0.013	0.001	2040	16.6	1.1
	1548	0.008	0.001	2417	44.8	76.4
	1550	0.004	0.000	2291	39.8	65.7
	1551	0.004	0.000	2221	29.8	18.7
	1552	0.001	0.000	2092	29.9	29.1
	1553	0.000	0.000	2294	30.1	32.3
	1554	0.011	0.001	2386	42.2	94.9
Lupfer Glacier	1555	0.101	0.009	1868	30.6	94.9
	1556	0.014	0.001	1895	27.2	70.2
	1557	0.037	0.003	2107	20.3	43.8
	1559	0.006	0.001	2052	56.5	40.5
	1560	0.033	0.003	2097	19.7	11.5
	1561	0.032	0.003	2262	19.8	48.6
	1562	0.007	0.001	2102	34.4	357.8
	1563	0.018	0.002	2333	28.7	43.8
	1564	0.008	0.001	2112	35.7	105.4
	1565	0.011	0.001	2638	42.7	47.3
	1566	0.022	0.002	2539	36.1	23.7
	1567	0.013	0.001	1972	12.5	116.7

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1568	0.101	0.009	2270	28.9	73.8
	1569	0.017	0.002	2084	30.5	127.1
	1570	0.006	0.001	2170	20.0	12.0
	1571	0.005	0.000	2361	25.7	96.7
	1572	0.035	0.003	2446	21.4	10.9
	1573	0.038	0.003	1944	22.3	16.4
	1574	0.002	0.000	2567	35.4	351.0
	1575	0.009	0.001	2183	24.6	2.7
	1576	0.003	0.000	2172	2.1	359.8
	1578	0.026	0.002	2089	33.1	9.0
	1579	0.010	0.001	2334	26.8	351.0
	1580	0.020	0.002	2556	32.2	5.7
	1581	0.023	0.002	2219	18.4	55.8
	1582	0.055	0.005	2079	27.7	30.8
	1583	0.021	0.002	2198	39.4	50.1
	1584	0.005	0.000	2188	26.9	164.7
	1588	0.274	0.025	2420	9.7	358.1
Sperry Glacier	1589	0.886	0.080	2384	14.3	3.0
Stanton Glacier	1592	0.306	0.028	2505	19.3	42.5
Grant Glacier	1593	0.295	0.027	2412	21.1	71.4
	1594	0.002	0.000	2407	42.9	59.1
	1596	0.002	0.000	2424	10.3	353.7
	1597	0.008	0.001	2163	17.8	9.3
	1598	0.007	0.001	2231	44.0	328.9
Harrison Glacier	1601	1.370	0.123	2492	9.5	94.7
	1602	0.180	0.016	2203	15.7	92.9
	9980	0.178	0.016	2212	12.7	97.3

2013

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1005	0.058	0.005	1994	27.6	34.2
	1006	0.008	0.002	2096	27.5	327.1

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Herbst Glacier	1011	0.007	0.001	2214	40.7	4.5
	1012	0.021	0.002	2404	30.0	37.1
	1013	0.085	0.008	2245	32.2	59.4
	1015	0.012	0.001	2459	41.3	45.7
	1016	0.009	0.001	2559	38.0	41.9
	1017	0.027	0.002	2311	40.9	332.2
	1021	0.123	0.011	1713	19.8	49.6
Hudson Glacier	1024	0.074	0.007	2293	25.3	352.5
	1025	0.024	0.002	1647	35.2	344.2
	1026	0.236	0.009	2443	42.2	356.2
	1027	0.022	0.002	2352	42.2	342.1
	1029	0.065	0.006	2142	41.3	10.7
	1031	0.001	0.000	2139	28.5	354.9
	1033	0.005	0.001	2301	46.0	1.5
Boulder Glacier	1035	0.035	0.003	1943	30.4	75.3
	1036	0.006	0.001	2346	47.8	12.9
	1038	0.009	0.001	2137	45.1	64.2
	1041	0.065	0.006	2369	25.7	15.4
	1042	0.041	0.004	2470	21.5	318.4
	1043	0.005	0.002	2438	32.4	27.0
	1059	0.015	0.004	2084	28.2	350.3
Miche Waburn	1065	0.005	0.002	2195	40.1	6.1
	1066	0.006	0.002	2246	39.8	336.6
	1071	0.045	0.004	2109	24.0	43.3
	1074	0.115	0.005	2208	31.0	12.1
	1075	0.003	0.001	2215	31.5	31.3
	1079	0.035	0.003	2365	34.1	22.4
	1088	0.109	0.010	2120	18.3	13.4
Thunderbird Glacier	1089	0.139	0.013	2288	22.1	44.4
	1090	0.004	0.000	2430	43.7	91.1
	1091	0.085	0.008	2421	38.1	86.7
Dixon Glacier	1093	0.027	0.002	2411	38.5	352.6
	1094	0.185	0.017	2263	24.3	20.2
	1095	0.013	0.004	2239	34.3	309.9
	1096	0.036	0.003	2334	23.0	327.9
	1098	0.009	0.003	2053	38.8	350.0
	1102	0.044	0.013	2022	41.4	354.2
	1104	0.015	0.001	2875	47.8	95.6
	1105	0.015	0.001	2572	37.8	96.2

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Whitecrow Glacier	1106	0.016	0.001	3109	50.8	110.6
	1108	0.066	0.006	2133	32.0	128.1
	1114	0.010	0.001	2292	41.1	108.1
	1115	0.021	0.002	2073	33.9	106.7
	1118	0.187	0.007	2004	19.9	93.1
	1122	0.005	0.000	2136	26.9	159.1
	1125	0.007	0.001	2267	35.7	135.6
Weasel Collar Glacier	1126	0.519	0.021	2185	8.8	15.5
Carter Glaciers	1130	0.020	0.002	2245	30.5	92.4
	1131	0.039	0.012	1899	32.6	354.4
	1132	0.239	0.022	2359	18.9	40.3
	1133	0.029	0.003	2270	27.3	109.2
	1135	0.014	0.001	2428	28.7	64.4
	1138	0.011	0.001	2614	27.4	331.5
	1143	0.039	0.004	2268	22.4	54.5
Carter Glaciers	1144	0.024	0.002	2238	28.1	85.7
	1146	0.048	0.004	2479	37.2	38.5
	1148	0.034	0.003	2185	20.2	18.7
	1151	0.092	0.008	2198	17.7	94.7
	1155	0.068	0.003	2345	28.8	346.1
	1156	0.380	0.015	2673	16.8	97.3
	1157	0.048	0.004	2242	32.8	359.1
Shepard Glacier	1160	0.036	0.003	2221	30.1	102.3
	1163	0.001	0.000	2908	43.6	12.5
	1164	0.108	0.010	2330	33.4	68.5
	1168	0.012	0.001	2217	4.4	8.9
	1169	0.002	0.000	2981	35.9	59.8
	1171	0.004	0.001	2355	23.3	85.0
	1172	0.214	0.019	1738	25.4	56.9
Chaney Glacier	1176	0.070	0.021	2333	40.3	354.9
	1178	0.008	0.001	2314	14.8	34.0
	1185	0.382	0.015	2252	17.9	26.6
	1186	0.006	0.001	2046	35.2	25.1
	1189	0.011	0.003	2122	42.1	316.4
	1190	0.130	0.005	2149	29.0	57.6
	1191	0.002	0.001	2178	38.2	275.1
	1193	0.017	0.002	2735	47.0	126.7
	1194	0.002	0.000	2103	38.8	18.3

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Ipasha Glacier	1195	0.210	0.019	2288	20.8	26.8
	1196	0.014	0.001	2038	30.3	30.0
	1197	0.003	0.000	2021	38.5	332.5
	1199	0.044	0.004	2492	29.8	297.0
	1200	0.003	0.001	2111	45.9	354.7
Two Ocean Glacier	1201	0.297	0.027	2585	15.1	92.1
Ahern Glacier	1202	0.504	0.020	2489	12.0	85.2
	1203	0.013	0.001	2197	38.6	142.0
	1204	0.003	0.000	2684	43.3	103.1
	1208	0.005	0.000	2410	31.7	306.8
	1210	0.008	0.001	2666	35.0	72.8
Vulture Glacier	1212	0.035	0.003	2267	25.0	68.3
	1216	0.019	0.002	2644	31.0	125.4
	1218	0.003	0.000	2526	25.7	195.5
	1219	0.027	0.002	2475	18.6	4.8
	1222	0.024	0.002	2502	22.7	186.4
	1224	0.354	0.014	2565	32.0	81.9
	1227	0.118	0.011	1785	31.5	74.5
	1229	0.033	0.003	2703	33.3	142.8
	1230	0.008	0.001	2214	26.7	61.6
	1231	0.042	0.004	1730	21.0	17.5
Swiftcurrent Glacier	1236	0.012	0.001	2269	30.2	142.9
	1238	0.019	0.002	2089	48.5	340.0
	1239	0.013	0.001	1975	33.3	136.7
	1240	0.060	0.005	1878	9.7	78.0
	1243	0.007	0.002	2090	44.6	110.3
	1246	0.011	0.001	2035	38.3	62.7
	1250	0.046	0.004	2255	37.0	99.6
	1253	0.054	0.005	2179	27.7	32.2
	1254	0.032	0.003	2115	43.9	14.5
	1255	0.012	0.001	2385	48.4	51.5
Salamander Glacier	1256	0.023	0.002	1976	26.5	30.4
	1257	0.028	0.003	2258	22.6	93.4
	1258	0.028	0.003	2172	13.5	52.0
	1259	0.185	0.007	2231	40.6	28.1
Grinnell Glacier	1260	0.008	0.001	2243	17.2	6.8
	1261	0.043	0.002	2219	34.2	334.3
Salamander Glacier	1271	0.175	0.016	2196	16.6	107.0
Grinnell Glacier	1277	0.608	0.024	2025	7.4	14.2

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Gem Glacier	1281	0.012	0.004	2058	39.4	276.3
	1283	0.024	0.001	2511	38.6	36.0
	1284	0.068	0.006	2017	21.0	50.4
	1285	0.047	0.014	1977	43.7	329.5
	1286	0.011	0.001	2146	35.2	92.3
	1287	0.020	0.002	2646	42.4	356.7
	1288	0.046	0.004	1730	25.6	92.8
Siyeh Glacier	1291	0.073	0.007	2166	16.9	94.8
	1296	0.212	0.008	2106	18.5	17.0
	1300	0.008	0.001	2639	39.0	99.5
	1301	0.002	0.000	2420	39.3	133.9
	1302	0.018	0.002	2325	35.6	97.1
	1304	0.004	0.001	2036	26.1	71.0
	1307	0.010	0.001	2326	33.0	107.8
	1310	0.020	0.002	2307	27.3	40.4
	1311	0.001	0.000	2222	16.8	144.9
	1312	0.017	0.002	2272	30.0	353.4
	1313	0.033	0.003	2323	30.9	117.4
	1317	0.014	0.001	2207	35.7	356.3
	1319	0.013	0.001	2315	27.5	10.4
Piegan Glacier	1320	0.007	0.001	2466	23.6	93.1
	1323	0.260	0.023	2512	16.4	54.3
	1325	0.018	0.002	2471	45.2	128.1
Sexton Glacier	1329	0.352	0.032	2225	24.2	76.3
	1332	0.031	0.003	2348	39.3	113.4
	1343	0.101	0.009	2240	26.9	113.0
	1352	0.073	0.007	2624	41.4	36.3
	1357	0.016	0.001	2399	40.5	134.3
	1360	0.014	0.001	2343	39.3	11.5
	1362	0.119	0.011	2132	23.5	56.5
	1370	0.008	0.003	2210	36.8	4.0
	1372	0.007	0.001	2293	19.4	357.8
	1374	0.009	0.001	2333	22.9	152.4
	1379	0.248	0.022	2340	8.0	72.4
	1380	0.038	0.003	2510	38.0	118.0
	1381	0.002	0.001	2494	36.6	3.0
	1386	0.031	0.003	2373	25.8	65.4
	1388	0.070	0.006	2403	32.0	104.8
	1389	0.009	0.001	2166	29.3	109.9

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1393	0.022	0.002	2463	31.2	7.4
	1394	0.005	0.000	2173	29.1	111.3
	1395	0.076	0.007	2284	28.6	89.6
	1396	0.014	0.001	2463	39.3	266.4
	1397	0.017	0.002	2498	31.5	64.6
	1398	0.035	0.003	2192	41.5	10.2
	1399	0.012	0.001	2129	30.2	28.6
	1400	0.006	0.001	2392	36.9	140.8
	1401	0.003	0.000	2488	29.9	52.5
	1402	0.019	0.002	2276	28.7	157.3
	1403	0.027	0.008	2284	22.3	297.5
	1404	0.007	0.001	2010	28.8	51.0
	1406	0.008	0.001	2190	26.8	61.5
	1407	0.010	0.001	2048	19.5	66.5
	1409	0.011	0.001	2255	34.7	149.1
	1411	0.007	0.001	2219	29.5	64.4
	1413	0.075	0.003	2479	45.5	6.8
Jackson Glacier	1414	1.039	0.042	2180	22.9	32.9
	1417	0.003	0.000	2100	22.5	81.8
	1419	0.081	0.003	2399	31.0	322.6
	1420	0.010	0.001	2075	15.9	76.1
	1421	0.254	0.023	2274	29.7	316.4
Logan Glacier	1423	0.326	0.029	2213	23.4	38.3
	1424	0.185	0.007	2498	30.4	323.3
	1426	0.005	0.000	2337	42.2	351.0
	1428	0.015	0.001	2658	38.6	87.6
	1429	0.021	0.002	2771	30.8	85.6
Blackfoot Glacier	1430	1.567	0.063	2288	16.6	20.5
	1431	0.030	0.009	2418	36.6	286.4
	1432	0.054	0.005	2789	45.5	165.1
	1433	0.008	0.001	2572	43.4	107.3
	1436	0.003	0.001	2286	35.0	280.3
	1437	0.015	0.004	2023	38.3	300.9
	1439	0.008	0.001	2597	46.8	168.0
	1441	0.103	0.009	2434	36.5	341.4
	1442	0.017	0.002	2481	34.9	59.6
	1443	0.359	0.032	2395	21.5	117.7
	1444	0.026	0.001	2502	40.6	15.0
	1445	0.041	0.004	2336	35.5	319.3

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Red Eagle Glacier	1446	0.003	0.001	2289	26.6	227.5
	1447	0.100	0.009	2156	22.1	32.2
	1448	0.061	0.002	2429	38.5	312.8
	1449	0.009	0.001	2523	32.3	350.1
	1450	0.037	0.003	2223	21.1	133.5
	1452	0.004	0.001	2321	33.2	125.4
	1453	0.009	0.001	2454	35.1	170.8
	1454	0.005	0.000	2245	30.5	120.0
	1455	0.033	0.003	2373	20.8	148.0
	1456	0.005	0.000	2203	24.4	158.3
	1457	0.121	0.011	2418	9.6	70.9
	1458	0.006	0.002	2280	25.8	133.4
	1459	0.007	0.001	2513	34.0	92.9
	1460	0.007	0.001	2312	13.5	113.8
	1461	0.011	0.001	2267	22.2	135.5
	1462	0.016	0.001	2494	15.7	226.9
	1463	0.003	0.000	2260	34.6	209.9
	1464	0.004	0.000	2157	24.1	148.3
Pumpelly Glacier	1466	0.877	0.035	2527	24.8	78.2
	1468	0.017	0.002	2165	23.6	64.2
	1470	0.010	0.001	2055	18.0	163.3
	1471	0.037	0.003	2663	28.2	346.2
	1472	0.079	0.007	2527	29.6	333.7
	1473	0.053	0.005	2157	24.4	128.2
	1484	0.028	0.003	2248	15.0	64.5
	1485	0.015	0.001	2813	42.2	103.4
	1487	0.027	0.001	2481	34.8	175.3
	1489	0.005	0.000	2758	40.4	142.3
	1490	0.015	0.001	2349	33.7	48.6
	1492	0.016	0.001	1905	13.8	67.4
	1493	0.031	0.003	2337	34.2	131.8
	1494	0.031	0.003	2076	23.6	150.8
	1495	0.048	0.004	2173	35.4	138.3
	1496	0.009	0.003	1852	14.1	57.1
	1498	0.003	0.000	2182	26.8	108.7
	1500	0.005	0.000	2171	21.3	90.4
	1502	0.011	0.001	2251	32.2	63.9
	1503	0.014	0.001	2514	30.0	86.8
	1504	0.009	0.001	2398	26.2	64.1

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Sperry Glacier	1505	0.009	0.001	2649	18.9	77.3
	1588	0.249	0.022	2420	9.7	358.1
	1589	0.782	0.031	2384	14.3	3.0
	1590	0.025	0.007	2719	26.8	121.8
	1594	0.001	0.000	2407	42.9	59.1
	1596	0.002	0.000	2424	10.3	353.7
	1597	0.009	0.003	2163	17.8	9.3
Harrison Glacier	1598	0.008	0.002	2231	44.0	328.9
	1601	1.399	0.056	2492	9.5	94.7
	1602	0.186	0.007	2203	15.7	92.9
	9980	0.212	0.008	2212	12.7	97.3

2015

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Herbst Glacier	1004	0.029	0.002	2525	32.4	115.4
	1005	0.042	0.003	1993	27.9	38.5
	1011	0.005	0.000	2204	43.4	0.8
	1012	0.016	0.001	2411	30.5	38.7
	1013	0.032	0.002	2214	31.7	57.2
	1015	0.013	0.001	2432	35.7	39.9
	1016	0.006	0.000	2555	37.2	38.4
	1017	0.023	0.002	2292	57.2	339.4
	1021	0.108	0.008	1724	20.7	45.9
	1024	0.052	0.004	2285	31.9	0.3
Hudson Glacier	1029	0.052	0.004	2175	38.9	4.6
	1036	0.006	0.000	2343	47.1	12.0
Boulder Glacier	1041	0.043	0.003	2422	34.8	19.9
	1042	0.015	0.001	2524	29.8	340.7
	1044	0.034	0.002	1973	25.2	46.2
	1052	0.015	0.001	2078	23.2	68.8
	1054	0.002	0.000	2147	42.1	352.2
	1055	0.991	0.069	2380	17.7	83.0
	1059	0.010	0.001	2083	24.6	355.8
	1060	0.139	0.010	2148	28.4	35.5

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Miche Waburn	1065	0.003	0.000	2221	44.8	13.0
	1066	0.004	0.000	2230	38.5	325.2
	1067	0.002	0.000	2362	17.2	300.9
	1068	0.069	0.005	2193	29.1	344.0
	1069	0.011	0.001	2128	46.0	335.4
	1072	0.878	0.061	2541	11.5	14.8
	1073	0.136	0.010	2598	32.5	338.8
	1074	0.104	0.007	2229	23.7	15.5
	1075	0.003	0.000	2216	43.0	22.9
	1077	0.021	0.001	2267	42.7	324.5
	1079	0.018	0.001	2387	30.9	15.9
	1081	0.045	0.003	2282	31.0	323.9
	1082	0.002	0.000	2513	34.7	8.8
	1084	0.117	0.008	2644	33.7	56.2
	1085	0.022	0.002	2204	26.8	70.7
Thunderbird Glacier	1086	0.017	0.001	2683	38.0	98.4
	1088	0.058	0.004	2233	53.9	332.9
	1089	0.118	0.008	2295	22.5	42.7
	1090	0.001	0.000	2440	50.0	85.2
	1091	0.069	0.005	2419	35.3	76.1
Dixon Glacier	1093	0.023	0.002	2416	41.4	352.5
	1094	0.132	0.009	2302	21.8	18.3
	1095	0.021	0.001	2232	33.6	308.5
	1096	0.014	0.001	2394	38.6	335.8
	1097	0.046	0.003	1902	34.9	98.9
Whitecrow Glacier	1098	0.009	0.001	2060	42.8	353.3
	1099	0.005	0.000	2026	33.7	270.1
	1102	0.034	0.002	1966	35.2	304.9
	1103	0.003	0.000	2055	49.1	310.9
	1104	0.013	0.001	2902	44.5	107.1
	1105	0.014	0.001	2563	32.7	120.4
	1106	0.008	0.001	3116	51.3	110.6
	1108	0.048	0.003	2115	25.9	136.3
	1114	0.007	0.000	2262	35.5	114.5
	1115	0.017	0.001	2067	34.8	106.5
	1118	0.107	0.007	2159	41.8	93.2
	1120	0.076	0.005	2075	20.1	59.1
	1122	0.012	0.001	2139	28.2	161.4
	1123	0.002	0.000	2358	25.8	84.4

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Weasel Collar Glacier	1125	0.007	0.001	2332	52.2	134.6
	1126	0.500	0.035	2189	8.5	17.2
	1128	0.046	0.003	2579	26.8	44.6
	1129	0.007	0.000	1837	35.9	317.8
	1130	0.015	0.001	2251	35.2	91.1
Carter Glaciers	1131	0.025	0.002	1910	26.6	355.6
	1132	0.225	0.016	2347	19.9	35.6
	1133	0.013	0.001	2290	37.2	94.7
	1135	0.009	0.001	2431	16.3	59.6
	1137	1.057	0.074	2500	19.1	84.5
	1138	0.007	0.001	2611	37.0	343.8
	1140	0.034	0.002	2491	21.7	162.9
	1141	0.025	0.002	2408	30.3	63.5
	1143	0.021	0.001	2263	20.7	55.1
	1144	0.008	0.001	2220	28.2	88.4
Carter Glaciers	1146	0.017	0.001	2450	50.4	63.4
	1148	0.013	0.001	2195	22.0	26.3
	1151	0.046	0.003	2203	35.9	56.7
	1155	0.054	0.004	2342	27.8	345.6
Old Sun Glacier	1156	0.341	0.024	2691	21.2	82.9
	1157	0.040	0.003	2243	33.4	5.2
	1160	0.024	0.002	2191	14.9	114.0
Shepard Glacier	1163	0.002	0.000	2906	43.6	11.8
	1164	0.071	0.005	2276	34.0	61.9
	1168	0.008	0.001	2216	6.5	349.5
	1169	0.003	0.000	2979	34.6	61.7
	1171	0.003	0.000	2358	24.3	87.4
Chaney Glacier	1176	0.060	0.004	2286	34.6	349.3
	1178	0.005	0.000	2347	34.4	352.2
	1185	0.355	0.025	2252	15.8	25.7
	1186	0.007	0.000	2067	53.7	18.3
	1189	0.008	0.001	2079	55.7	321.4
	1190	0.086	0.006	2186	34.6	58.8
	1191	0.002	0.000	2177	39.9	280.5
	1193	0.012	0.001	2767	46.8	122.5
	1194	0.000	0.000	2113	42.2	14.5
	1195	0.211	0.015	2292	13.6	89.0
Ipasha Glacier	1196	0.012	0.001	2045	31.7	31.9

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Two Ocean Glacier	1197	0.002	0.000	2018	36.8	331.3
	1199	0.023	0.002	2579	46.0	308.4
	1200	0.000	0.000	2106	42.5	343.2
	1201	0.250	0.017	2617	25.4	77.0
	Ahern Glacier 1202	0.512	0.036	2490	12.0	84.9
	1203	0.008	0.001	2201	38.8	143.1
	1204	0.002	0.000	2681	41.2	108.0
	1208	0.003	0.000	2397	40.3	314.2
	1210	0.006	0.000	2659	35.4	72.7
	1212	0.002	0.000	2352	25.6	58.8
Vulture Glacier	1216	0.003	0.000	2564	30.5	134.3
	1218	0.003	0.000	2545	32.4	185.4
	1219	0.019	0.001	2484	20.6	45.6
	1222	0.006	0.000	2461	17.0	106.1
	1224	0.297	0.021	2594	26.6	60.9
	1227	0.078	0.005	1788	32.0	58.1
	1229	0.032	0.002	2707	34.0	150.5
	1230	0.002	0.000	2222	28.2	125.2
	1231	0.037	0.003	1727	19.9	19.8
	1236	0.002	0.000	2282	32.5	147.3
Swiftcurrent Glacier	1238	0.017	0.001	2088	48.4	335.9
	1239	0.005	0.000	2020	32.9	138.3
	1240	0.025	0.002	1859	0.0	249.2
	1243	0.006	0.000	2092	44.9	125.7
	1246	0.019	0.001	2024	48.2	72.6
	1250	0.018	0.001	2205	21.0	96.4
	1253	0.053	0.004	2183	28.8	31.1
	1254	0.032	0.002	2101	37.4	18.7
	1255	0.010	0.001	2390	43.2	50.2
	1256	0.017	0.001	1978	27.8	16.0
Salamander Glacier	1257	0.020	0.001	2254	22.4	91.4
	1258	0.016	0.001	2173	15.5	45.4
	1259	0.172	0.012	2214	18.8	11.2
	1260	0.006	0.000	2250	26.9	7.7
Grinnell Glacier	1261	0.045	0.003	2202	28.2	343.3
	1271	0.176	0.012	2200	22.5	100.9
Gem Glacier	1277	0.564	0.039	2054	7.9	7.0
	1281	0.007	0.001	2021	22.4	277.0
	1283	0.022	0.002	2509	42.8	36.1

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1284	0.066	0.005	2016	15.7	85.8
	1285	0.043	0.003	1975	34.1	322.6
	1286	0.011	0.001	2145	33.7	91.7
	1287	0.020	0.001	2646	42.4	356.7
	1288	0.042	0.003	1737	34.8	97.8
	1291	0.071	0.005	2166	19.4	90.9
Siyeh Glacier	1296	0.232	0.016	2060	20.7	13.3
	1300	0.004	0.000	2624	36.2	91.0
	1301	0.002	0.000	2420	39.3	133.9
	1302	0.012	0.001	2299	33.2	96.9
	1304	0.006	0.000	2034	26.0	66.4
	1307	0.003	0.000	2353	43.3	102.6
	1310	0.014	0.001	2320	36.1	37.4
	1311	0.001	0.000	2224	21.2	128.9
	1312	0.018	0.001	2260	19.4	354.3
	1313	0.032	0.002	2358	5.8	91.6
	1317	0.014	0.001	2201	32.4	357.7
	1319	0.016	0.001	2320	30.1	12.8
	1320	0.008	0.001	2466	24.8	92.6
Piegan Glacier	1323	0.246	0.017	2519	17.0	57.1
	1325	0.015	0.001	2502	53.8	124.9
Sexton Glacier	1329	0.299	0.021	2209	23.7	64.5
	1332	0.028	0.002	2347	40.8	110.5
	1343	0.066	0.005	2264	26.7	103.1
	1347	0.034	0.002	2322	52.5	344.8
	1352	0.071	0.005	2714	31.1	73.4
	1356	0.006	0.000	2406	30.7	16.5
	1357	0.016	0.001	2416	48.8	132.1
	1360	0.010	0.001	2358	45.0	10.9
	1362	0.082	0.006	2121	24.5	74.6
	1363	0.003	0.000	1887	42.4	7.6
	1367	0.007	0.000	2393	27.7	7.5
	1368	0.003	0.000	2516	35.2	54.1
	1370	0.003	0.000	2210	36.8	4.0
	1372	0.007	0.001	2309	20.6	351.2
	1374	0.002	0.000	2324	18.2	142.0
	1379	0.219	0.015	2350	14.5	89.5
	1380	0.022	0.002	2495	31.1	153.7
	1381	0.002	0.000	2488	38.8	12.9

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
	1386	0.021	0.001	2377	25.1	62.8
	1388	0.054	0.004	2412	33.3	110.1
	1389	0.007	0.001	2172	31.4	113.7
	1393	0.022	0.002	2499	34.7	11.2
	1394	0.001	0.000	2173	29.1	111.3
	1395	0.039	0.003	2293	23.0	90.3
	1396	0.010	0.001	2463	39.3	266.4
	1397	0.009	0.001	2503	29.3	63.1
	1398	0.024	0.002	2278	32.4	24.9
	1399	0.008	0.001	2129	30.2	28.6
	1400	0.005	0.000	2392	36.9	140.8
	1401	0.005	0.000	2498	16.4	59.4
	1402	0.018	0.001	2282	29.1	153.2
	1403	0.019	0.001	2291	25.2	288.4
	1404	0.001	0.000	2007	28.4	51.7
	1406	0.005	0.000	2194	26.7	62.0
	1407	0.004	0.000	2054	28.1	74.8
	1409	0.009	0.001	2258	32.2	144.6
	1411	0.001	0.000	2213	32.7	69.1
	1413	0.061	0.004	2512	43.2	0.4
Jackson Glacier	1414	0.935	0.065	2227	15.3	80.4
	1417	0.002	0.000	2101	25.9	78.7
	1419	0.079	0.006	2394	30.1	325.0
	1420	0.003	0.000	2057	18.7	85.0
	1421	0.210	0.015	2459	38.2	309.3
Logan Glacier	1423	0.219	0.015	2208	14.2	74.4
	1424	0.149	0.010	2546	46.6	340.0
	1426	0.000	0.000	2359	40.0	353.8
	1428	0.013	0.001	2651	43.2	90.7
	1429	0.024	0.002	2778	37.6	86.7
Blackfoot Glacier	1430	1.522	0.107	2298	18.1	19.1
	1431	0.024	0.002	2417	35.5	286.1
	1432	0.049	0.003	2774	39.8	162.3
	1433	0.013	0.001	2565	41.0	103.5
	1436	0.002	0.000	2280	33.9	279.7
	1437	0.005	0.000	2041	38.2	299.6
	1439	0.007	0.000	2613	46.2	169.5
	1441	0.092	0.006	2461	35.4	341.2
	1442	0.013	0.001	2474	31.7	64.8

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Red Eagle Glacier	1443	0.323	0.023	2440	30.7	136.2
	1444	0.022	0.002	2549	27.0	2.0
	1445	0.034	0.002	2345	38.7	320.0
	1446	0.002	0.000	2297	26.8	203.7
	1447	0.080	0.006	2177	29.7	33.1
	1448	0.051	0.004	2428	37.7	313.3
	1449	0.009	0.001	2527	30.7	349.8
	1450	0.017	0.001	2230	19.8	161.2
	1452	0.001	0.000	2330	31.2	120.7
	1453	0.005	0.000	2449	41.8	169.9
	1454	0.001	0.000	2272	33.8	113.6
	1455	0.025	0.002	2392	27.6	146.1
	1456	0.003	0.000	2202	21.3	162.4
	1457	0.103	0.007	2408	13.7	162.0
	1458	0.004	0.000	2292	23.4	142.7
	1459	0.002	0.000	2526	35.3	98.7
	1460	0.005	0.000	2312	13.5	108.6
	1461	0.002	0.000	2272	19.1	137.9
	1462	0.005	0.000	2502	20.2	186.7
Pumpelly Glacier	1463	0.001	0.000	2276	35.2	196.5
	1464	0.000	0.000	2159	25.2	137.3
	1466	0.913	0.064	2568	18.5	79.2
	1468	0.018	0.001	2167	19.7	62.0
	1470	0.005	0.000	2062	18.7	167.0
	1472	0.044	0.003	2571	36.8	322.8
	1473	0.038	0.003	2170	25.1	127.4
	1484	0.013	0.001	2257	18.1	71.1
	1485	0.012	0.001	2833	39.4	98.7
	1487	0.028	0.002	2558	45.3	118.2
	1489	0.007	0.000	2769	50.1	156.8
	1490	0.008	0.001	2346	31.2	49.6
	1492	0.010	0.001	1917	16.4	91.1
	1493	0.024	0.002	2345	30.1	137.8
	1494	0.030	0.002	2092	26.5	153.5
	1495	0.026	0.002	2186	34.6	136.5
	1496	0.005	0.000	1852	10.7	67.3
	1498	0.002	0.000	2185	25.1	114.6
	1500	0.002	0.000	2162	19.2	84.4
	1502	0.008	0.001	2257	33.5	66.5

Glacier Name	RECNO	Area (km ²)	Uncert (km ²)	Mean Elevation	Slope	Aspect
Sperry Glacier	1503	0.009	0.001	2519	32.1	91.4
	1504	0.008	0.001	2402	26.4	66.4
	1505	0.009	0.001	2655	19.5	81.9
	1584	0.002	0.000	2189	26.1	156.6
	1588	0.257	0.018	2443	14.9	345.5
	1589	0.813	0.057	2441	15.5	355.4
	1592	0.286	0.020	2486	30.9	58.4
	1593	0.279	0.020	2402	20.9	78.6
	1594	0.000	0.000	2401	43.4	45.2
	1596	0.001	0.000	2426	9.4	6.3
	1597	0.007	0.001	2155	17.0	0.7
Harrison Glacier	1598	0.008	0.001	2194	29.2	344.9
	1601	1.344	0.094	2526	17.5	162.7
	1602	0.179	0.013	2208	15.7	97.6
	9980	0.168	0.012	2214	12.7	97.3