Supplement: Glacier-Wide Mass Balance Maps

Maps for balance years 2005-2015 displaying conventional glacier-wide seasonal and annual mass balances estimated using the site-index method. Elevation/balance contour lines are labelled and measurement points are indicated by yellow and black dots. Points labelled with letters indicate ablation stake sites.

White dotted lines on the annual balance maps for years 2005, 2009, 2010, and 2013 specify the location of the seasonal snow line that was measured in the field at the end of the ablation season. The accumulation zone is located at elevations above this line.

Balances assigned to each elevation band are labelled on each map. Italicized and underlined values indicate balances that have been inferred/extrapolated because no point balances are located in those bands. These values were derived from nearby measurement points, from mass balance gradients taken from two different measurement points, or in the case of winter balances above 2650 on the steep headwall, the mean b_w is used. Further details for each year are as follows:

2005

- Used a mass balance gradient value of 0.004 m w.e. m-1 derived from Stakes A and D to calculate the winter balance in the 2600-2650 band.
- Used a mass balance gradient value of 0.003 m w.e. m-1 derived from Stakes C and D to calculate summer balances in bands above 2550 m.

2006

- Used the average of points *19-annual transect* and *4-transect 106* for the winter balance in elevation band below 2300 m.
- Used a mass balance gradient value of 0.010 m w.e. m-1 derived from Stakes C and q to calculate summer balances in bands above 2550 m.
- Used b_s from stake site m as the assigned balance to elevations below 2350 m.

2007

- Used a mass balance gradient value of 0.006 m w.e. m-1 derived from Stakes C and D to calculate summer balances in bands above 2550 m.

2008

- Used a mass balance gradient value of 0.007 m w.e. m-1 derived from Stakes C and D to calculate winter balances in the 2550-2600 & 2600-2650 bands
- Used a mass balance gradient value of 0.004 m w.e. m-1 derived from Stakes C and D to calculate summer balances in bands above 2550 m.

2009

- Used a mass balance gradient value of 0.011 m w.e. m-1 derived from Stakes A and D to calculate winter balance in the 2600-2650 band.
- Used a mass balance gradient value of 0.0004 m w.e. m-1 derived from Stakes A and D to calculate summer balances in bands above 2550 m.

2010

- Used a mass balance gradient value of 0.007 m w.e. m-1 derived from Stakes C and D to calculate winter balance in the 2600-2650 band.
- Used a mass balance gradient value of 0.005 m w.e. m-1 derived from Stakes C and D to calculate summer balances in bands above 2550 m.

2011

- Used a mass balance gradient value of 0.006 m w.e. m-1 derived from Stakes C and D to calculate summer balances in bands above 2550 m.

2012

- Used a mass balance gradient value of 0.017 m w.e. m-1 derived from Stakes C and D to calculate winter balances in the 2550-2600 & 2600-2650 bands.
- Used a mass balance gradient value of 0.004 m w.e. m-1 derived from Stakes C and D to calculate summer balances in bands above 2550 m.

2013

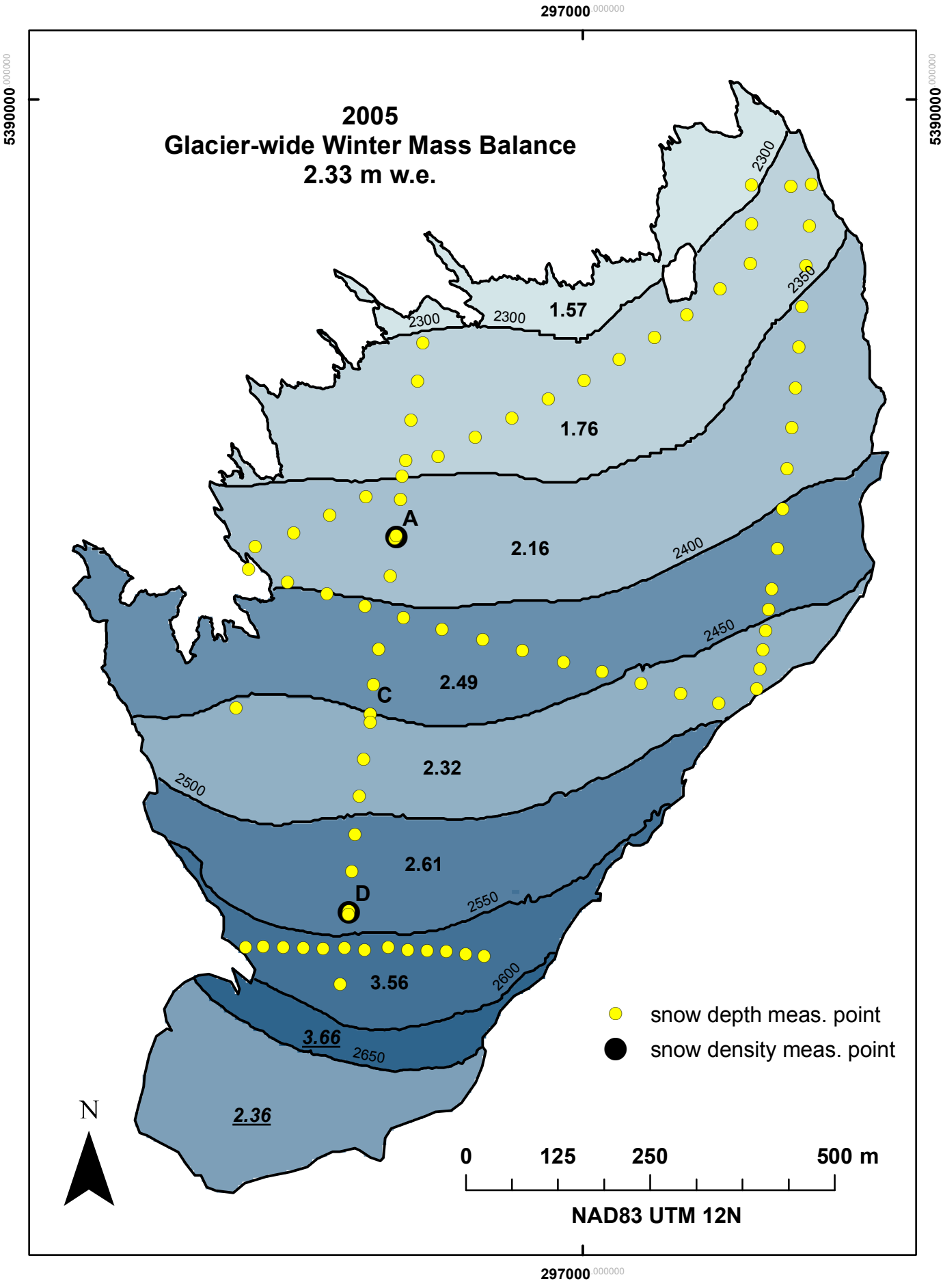
- Used a mass balance gradient value of 0.015 m w.e. m-1 derived from Stakes C and D to calculate winter balances in the 2600-2650 band.
- Used a mass balance gradient value of 0.011 m w.e. m-1 derived from Stakes C and D to calculate summer balances in bands above 2550 m.
- Used b_s from stake site B as the assigned summer balance to elevations below 2300 m.

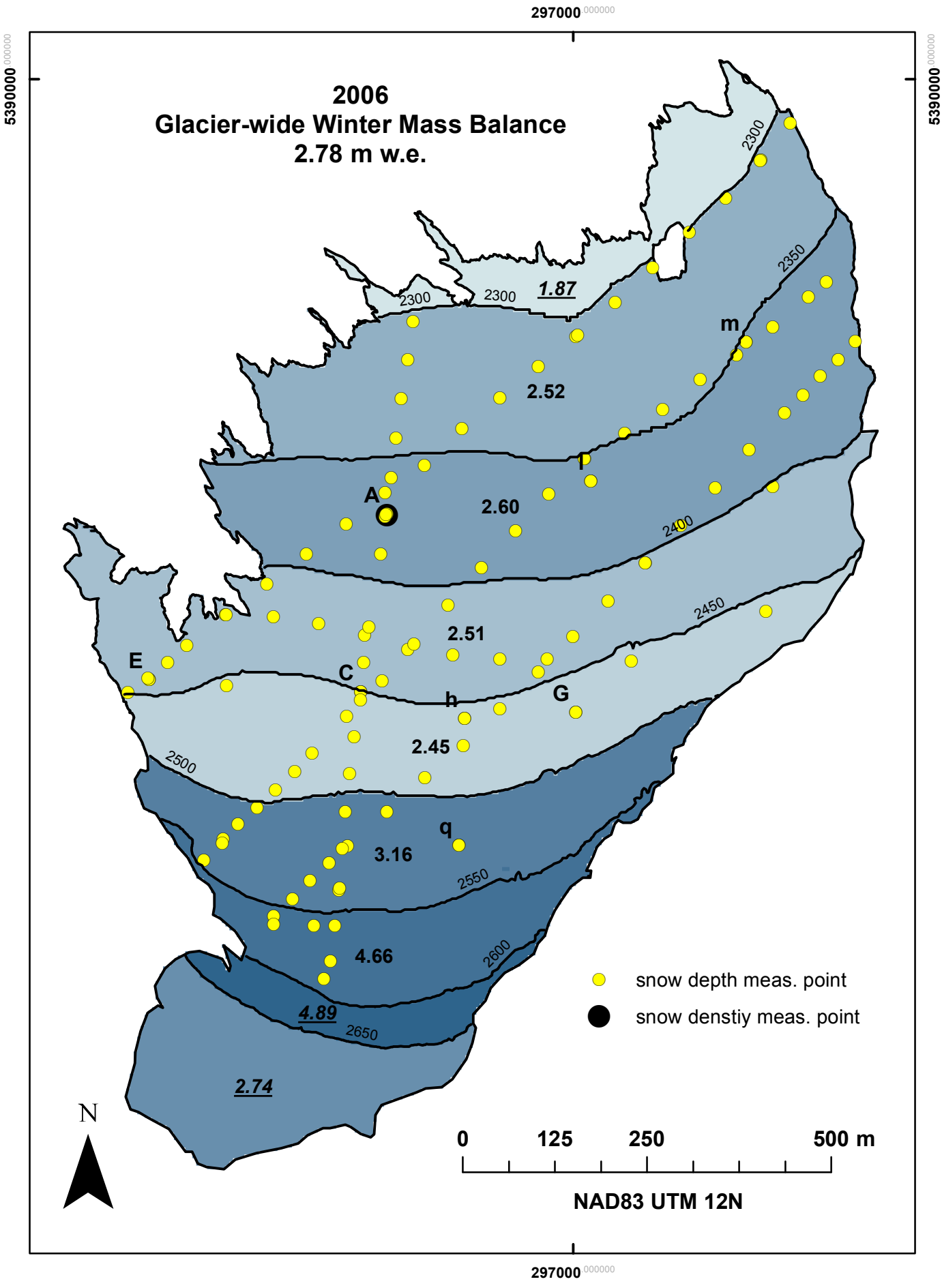
2014

- Used a mass balance gradient value of 0.019 m w.e. m-1 derived from Stakes C and D to calculate winter balances in the 2550-2600 & 2600-2650 bands.
- Used b_w from stake site B as the assigned winter balance to elevations below 2300 m.
- Used a mass balance gradient value of 0.004 m w.e. m-1 derived from Stakes C and D to calculate summer balances in bands above 2550 m.
- Used b_a from stake site B for the annual balance at elevations below 2300 m.

2015

- Used a mass balance gradient value of 0.012 m w.e. m-1 derived from Stakes C and Z to calculate winter balance in the 2600-2650 band.
- Used b_w from stake site B as the assigned winter balance to elevations below 2300 m.
- Used a mass balance gradient value of 0.015 m w.e. m-1 derived from Stakes C and Z to calculate summer balances in bands above 2600 m.
- Used b_s and b_a from stake site B to assign summer and annual balances to elevations below 2300 m.


297000
5390000
2005
Glacier-wide Winter Mass Balance
2.33 m w.e.
2300
2350
2400
2450
2500
2550
2600
2650
1.57
1.76
2.16
2.49
2.32
2.61
3.56
3.66
2.36
A
C
D
snow depth meas. point
snow density meas. point
N
0
125
250
500 m
NAD83 UTM 12N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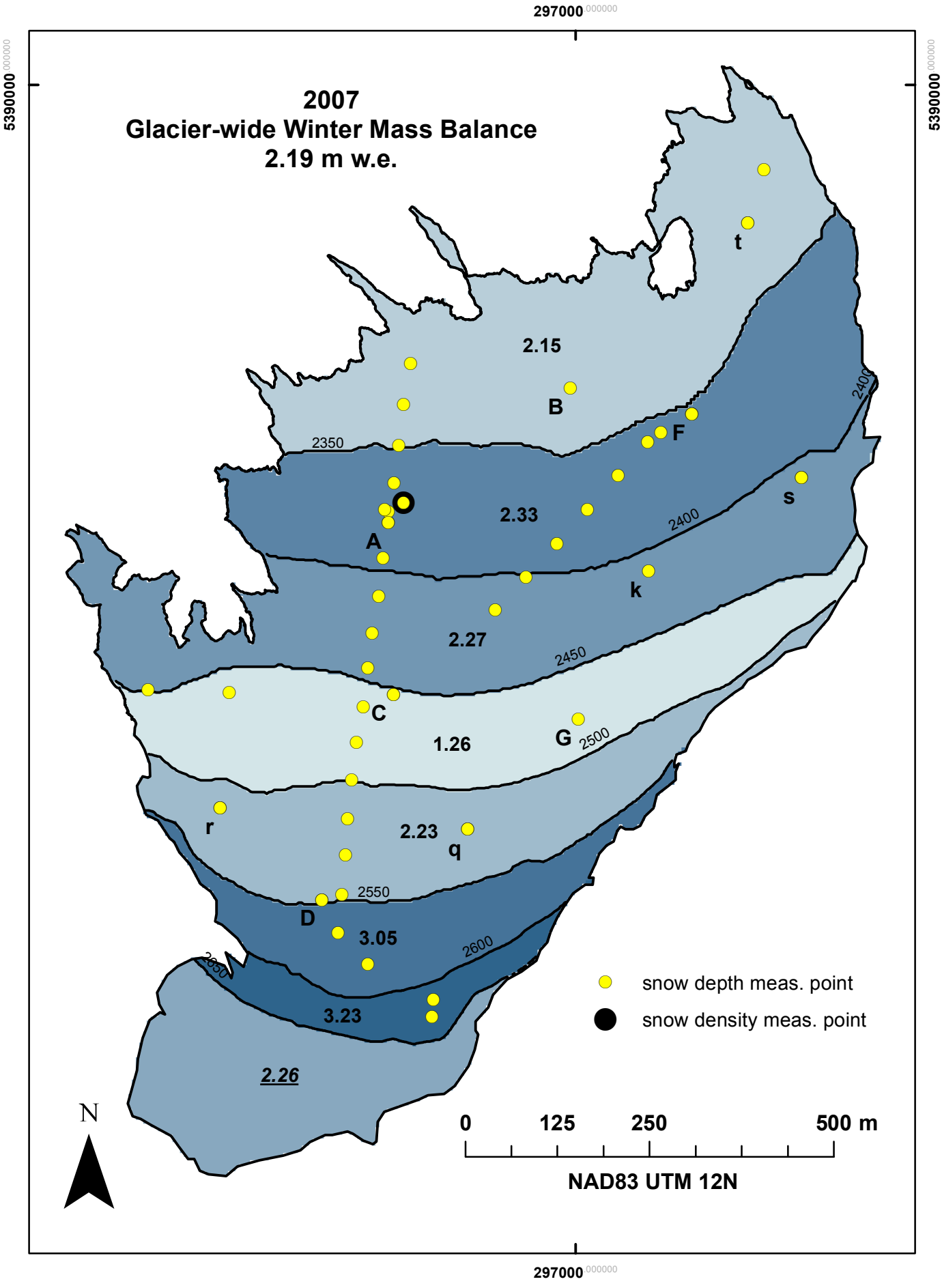
2006
Glacier-wide Winter Mass Balance
2.78 m w.e.
2300
2300
1.87
2350
m
2.52
l
A
2.60
2400
2450
2.51
E
C
h
G
2.45
2500
q
3.16
2550
4.66
2600
4.89
2650
2.74
snow depth meas. point
snow denstiy meas. point
N
0
125
250
500 m
NAD83 UTM 12N
297000.000000
5390000.000000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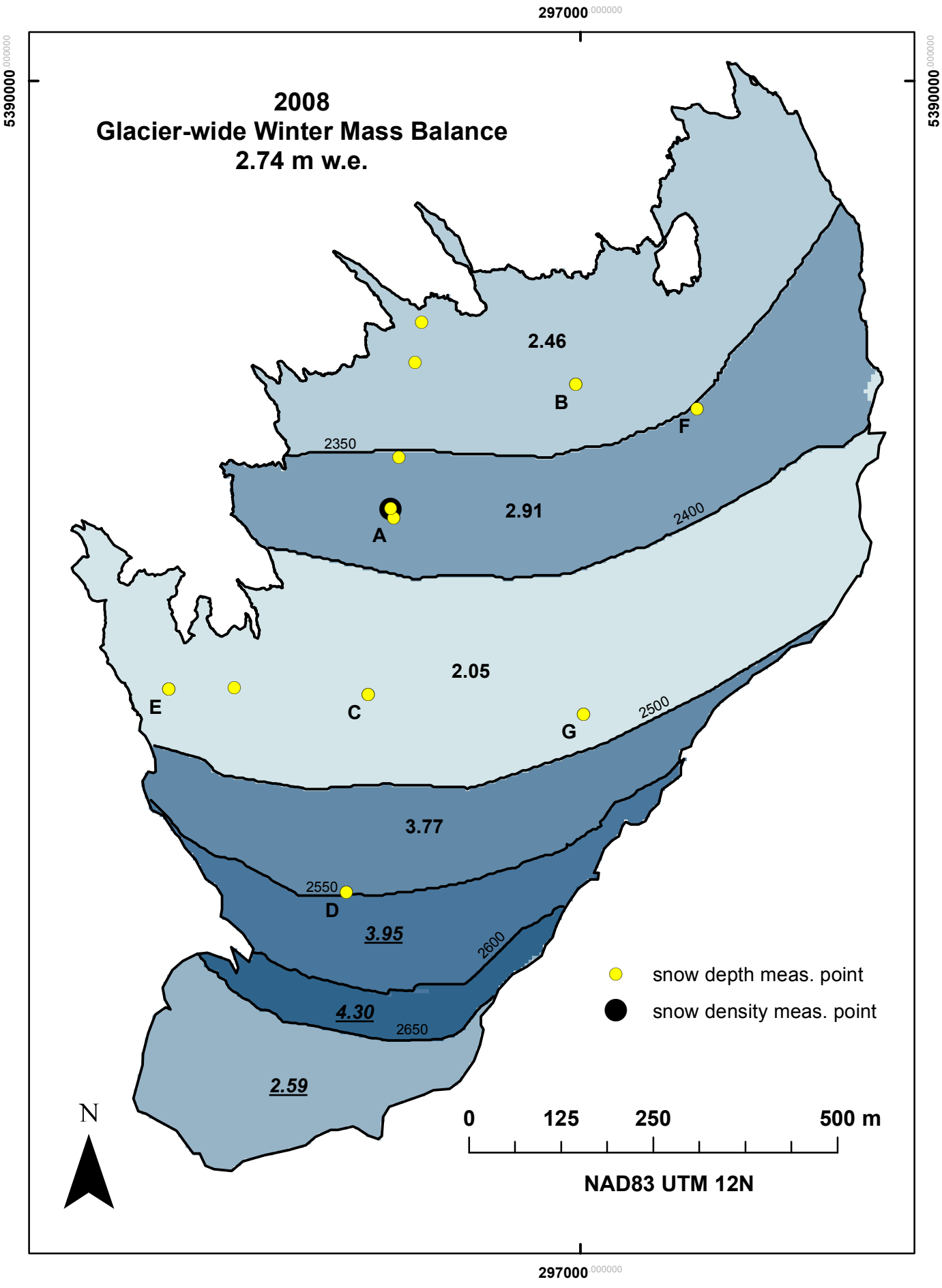
2007
Glacier-wide Winter Mass Balance
2.19 m w.e.
2.15
2.33
2.27
1.26
2.23
3.05
3.23
2.26
2350
2400
2450
2500
2550
2600
A
B
C
D
F
G
k
q
r
s
t
snow depth meas. point
snow density meas. point
N
0
125
250
500 m
NAD83 UTM 12N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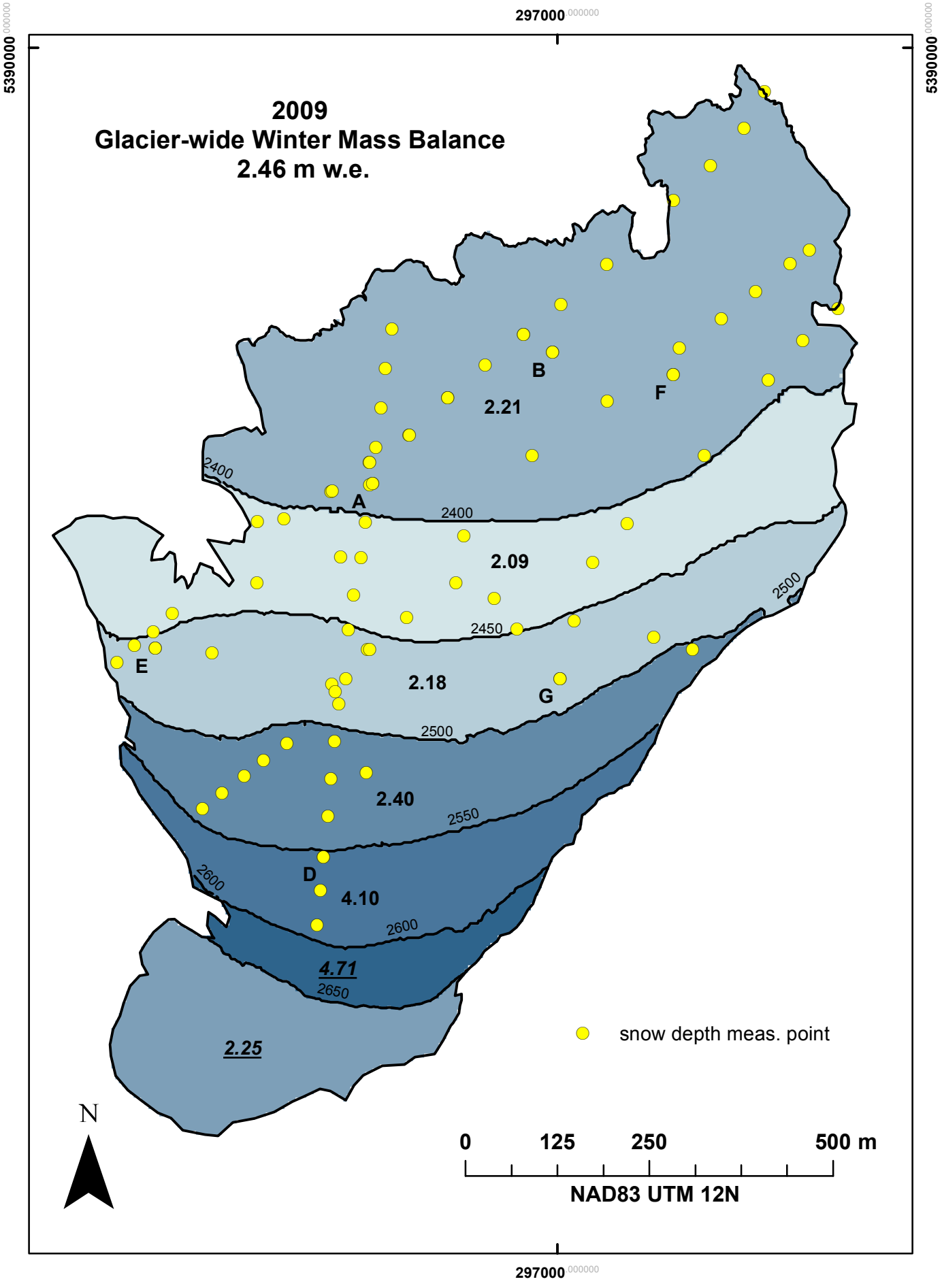
2008
Glacier-wide Winter Mass Balance
2.74 m w.e.
2.46
B
F
2350
2.91
2400
A
2.05
E
C
G
2500
3.77
2550
D
3.95
2600
4.30
2650
2.59
snow depth meas. point
snow density meas. point
N
0
125
250
500 m
NAD83 UTM 12N
297000 000000
5390000 000000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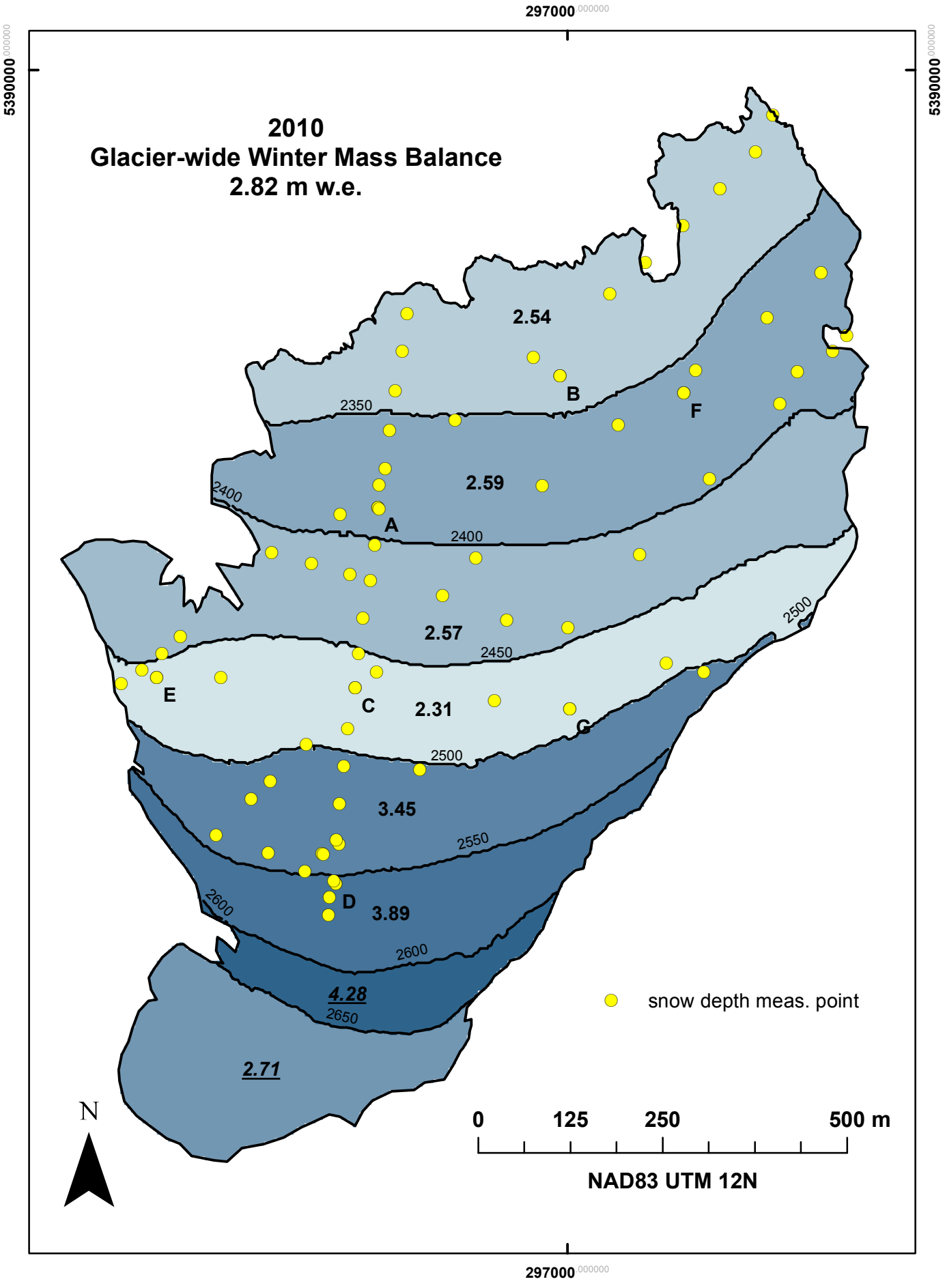
2009
Glacier-wide Winter Mass Balance
2.46 m w.e.
B
F
2.21
2400
A
2400
2.09
2500
2450
E
2.18
G
2500
2.40
2550
D
2600
4.10
2600
4.71
2650
2.25
snow depth meas. point
N
0
125
250
500 m
NAD83 UTM 12N
297000 000000
5390000 000000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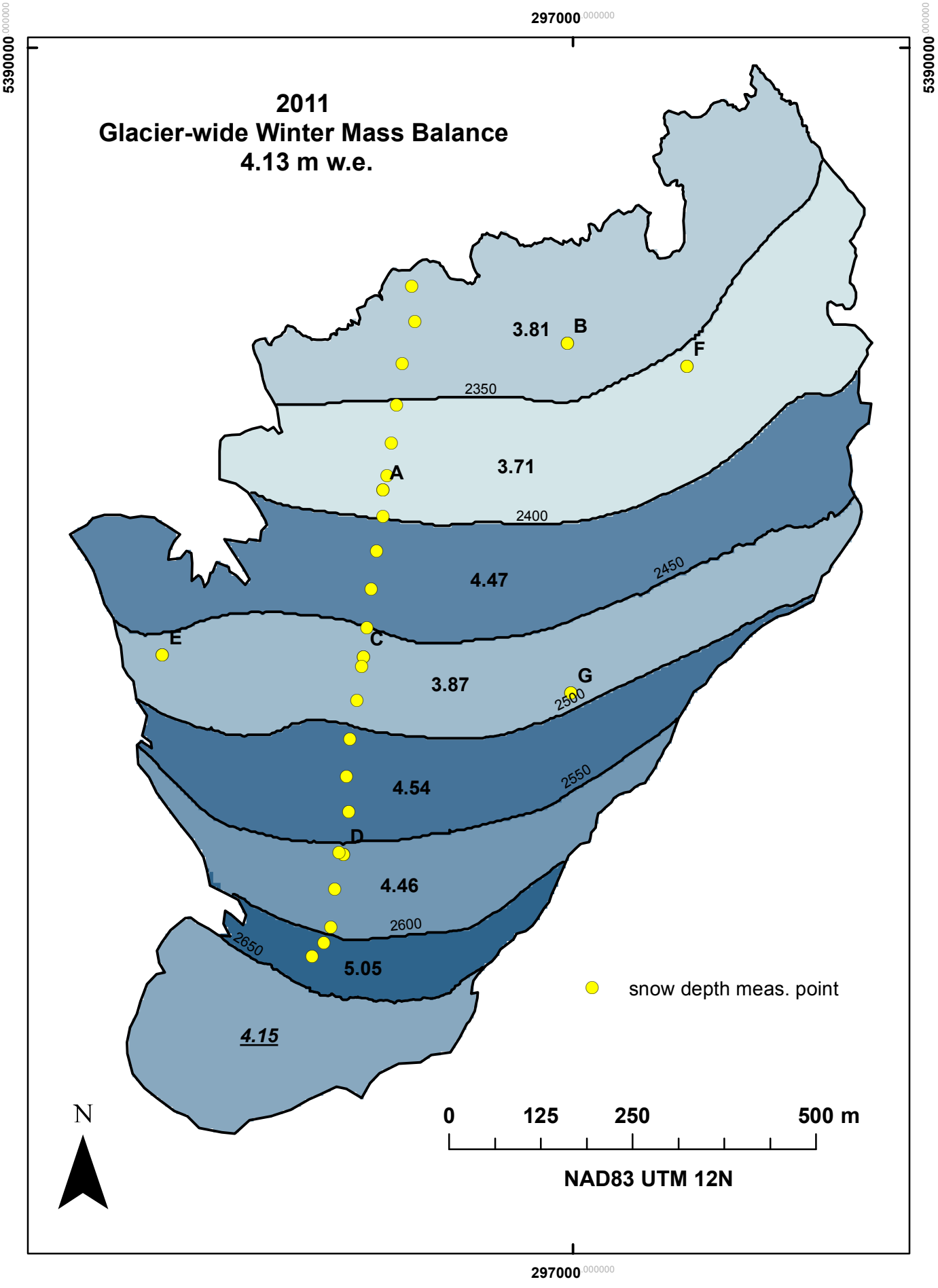
2010
Glacier-wide Winter Mass Balance
2.82 m w.e.
2.54
B
F
2350
2.59
2400
A
2400
2.57
2500
2450
E
C
2.31
G
2500
3.45
2550
2600
D
3.89
2600
4.28
2650
2.71
snow depth meas. point
N
0
125
250
500 m
NAD83 UTM 12N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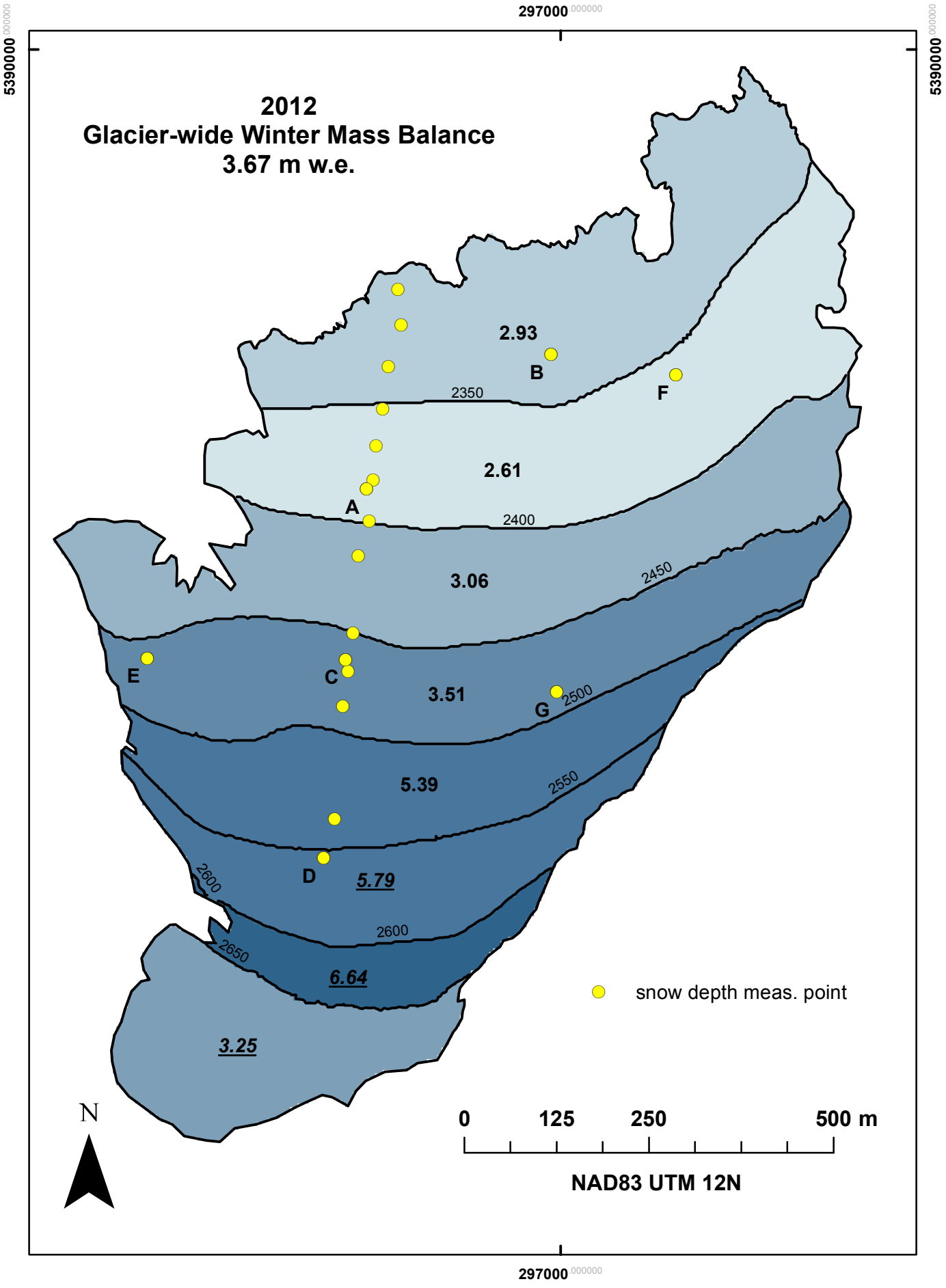
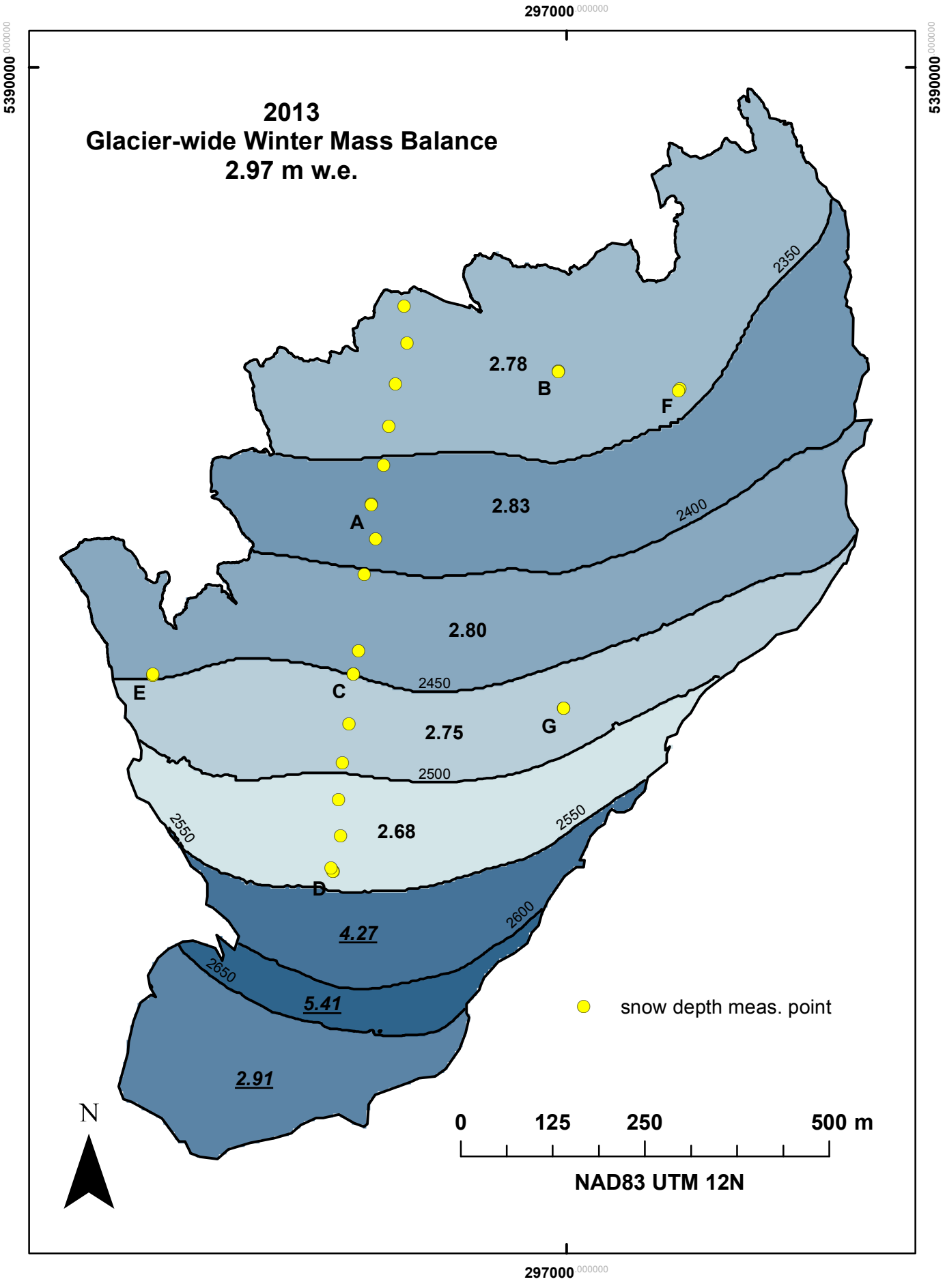
5390000 000000
2011
Glacier-wide Winter Mass Balance
4.13 m w.e.
3.81
B
F
2350
3.71
A
2400
4.47
2450
E
C
3.87
G
2500
4.54
2550
D
4.46
2600
2650
5.05
4.15
snow depth meas. point
N
0
125
250
500 m
NAD83 UTM 12N
297000 000000
5390000 000000


2012
Glacier-wide Winter Mass Balance
3.67 m w.e.
297000 000000
5390000 000000
2.93
B
F
2350
2.61
A
2400
3.06
2450
E
C
3.51
G
2500
5.39
2550
D
5.79
2600
2600
2650
6.64
3.25
snow depth meas. point
N
0
125
250
500 m
NAD83 UTM 12N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2013
Glacier-wide Winter Mass Balance
2.97 m w.e.
2350
2.78
B
F
2.83
A
2400
2.80
E
C
2450
2.75
G
2500
2550
2.68
2550
D
4.27
2600
2650
5.41
2.91
snow depth meas. point
N
0
125
250
500 m
NAD83 UTM 12N
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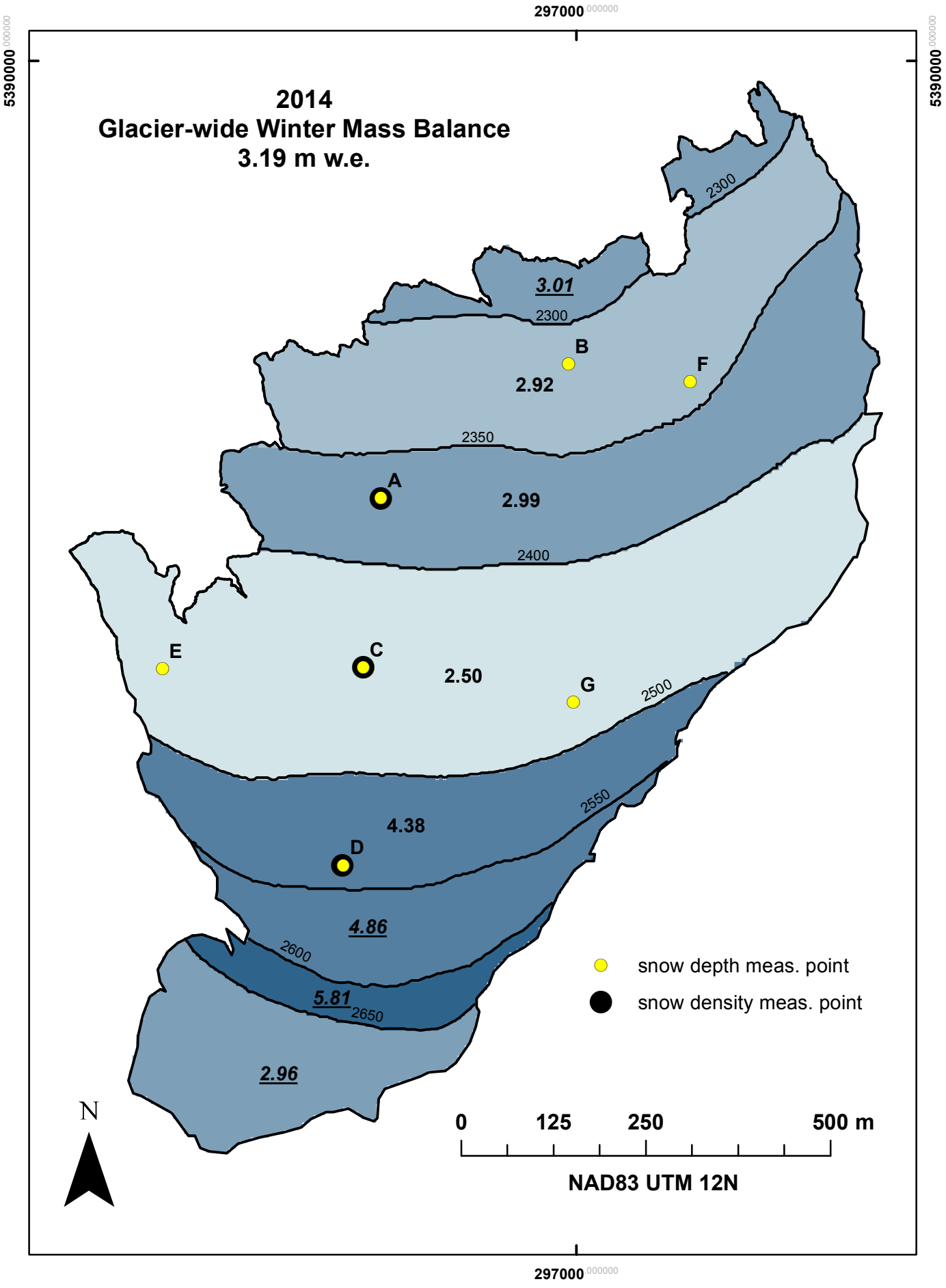
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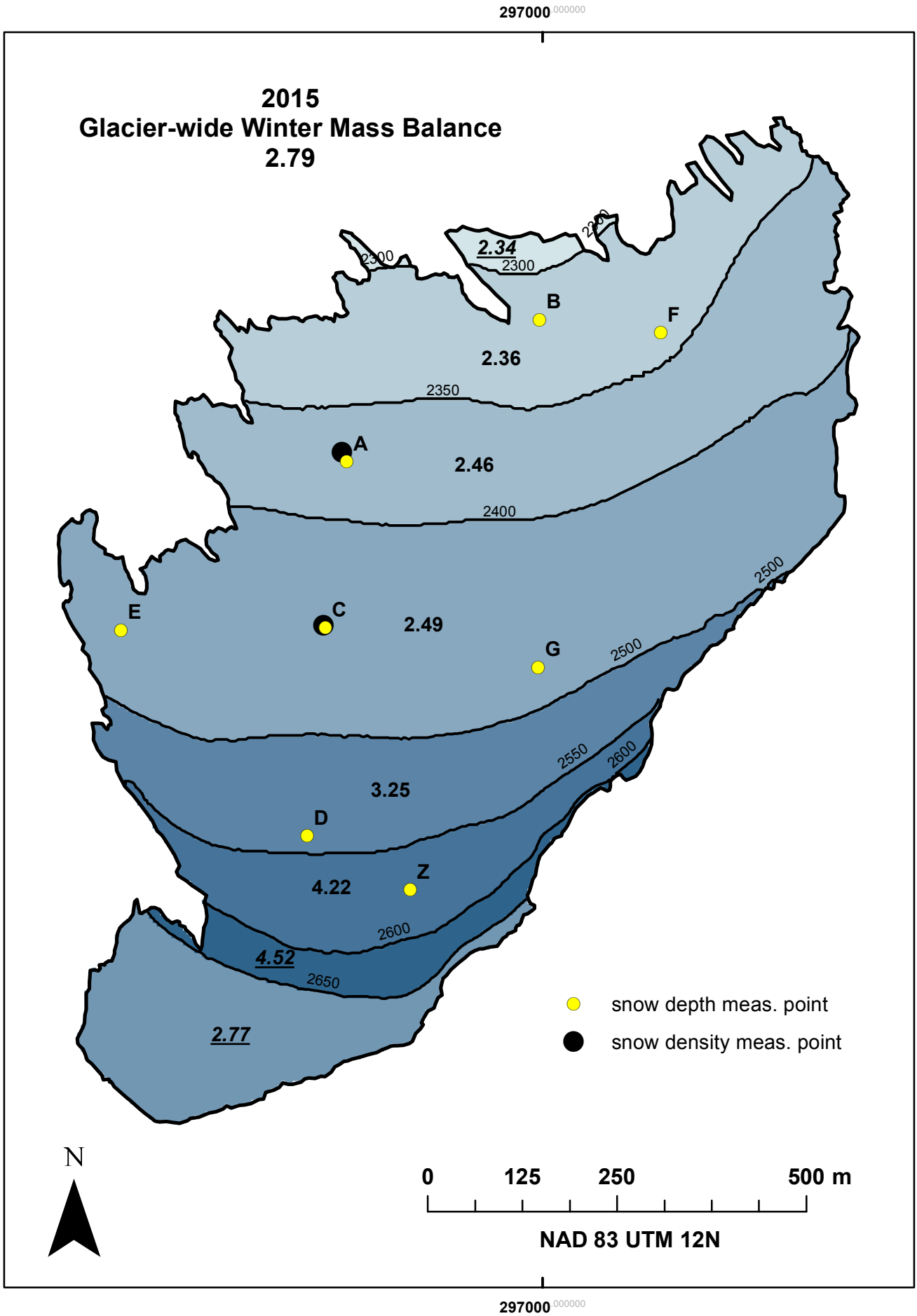
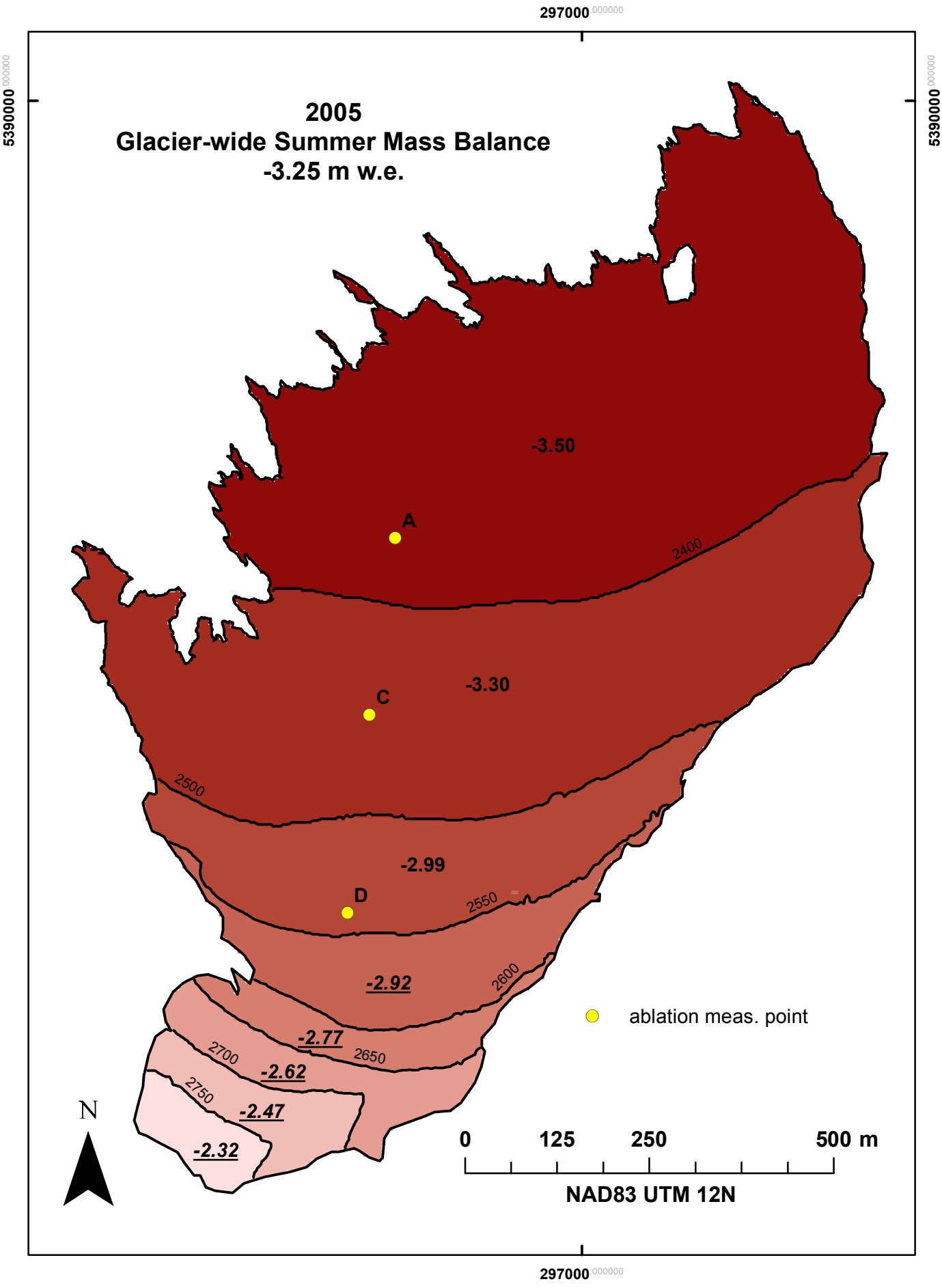
2014
Glacier-wide Winter Mass Balance
3.19 m w.e.
2300
3.01
2300
B
F
2.92
2350
A
2.99
2400
E
C
2.50
G
2500
2550
4.38
D
4.86
2600
5.81
2650
2.96
snow depth meas. point
snow density meas. point
N
0
125
250
500 m
NAD83 UTM 12N
297000.000000
5390000.000000


297000 000000
2015
Glacier-wide Winter Mass Balance
2.79
2.34
2300
2200
B
F
2.36
2350
A
2.46
2400
2500
E
C
2.49
G
2500
2550
2600
3.25
D
Z
4.22
2600
4.52
2650
2.77
snow depth meas. point
snow density meas. point
N
0
125
250
500 m
NAD 83 UTM 12N
297000 000000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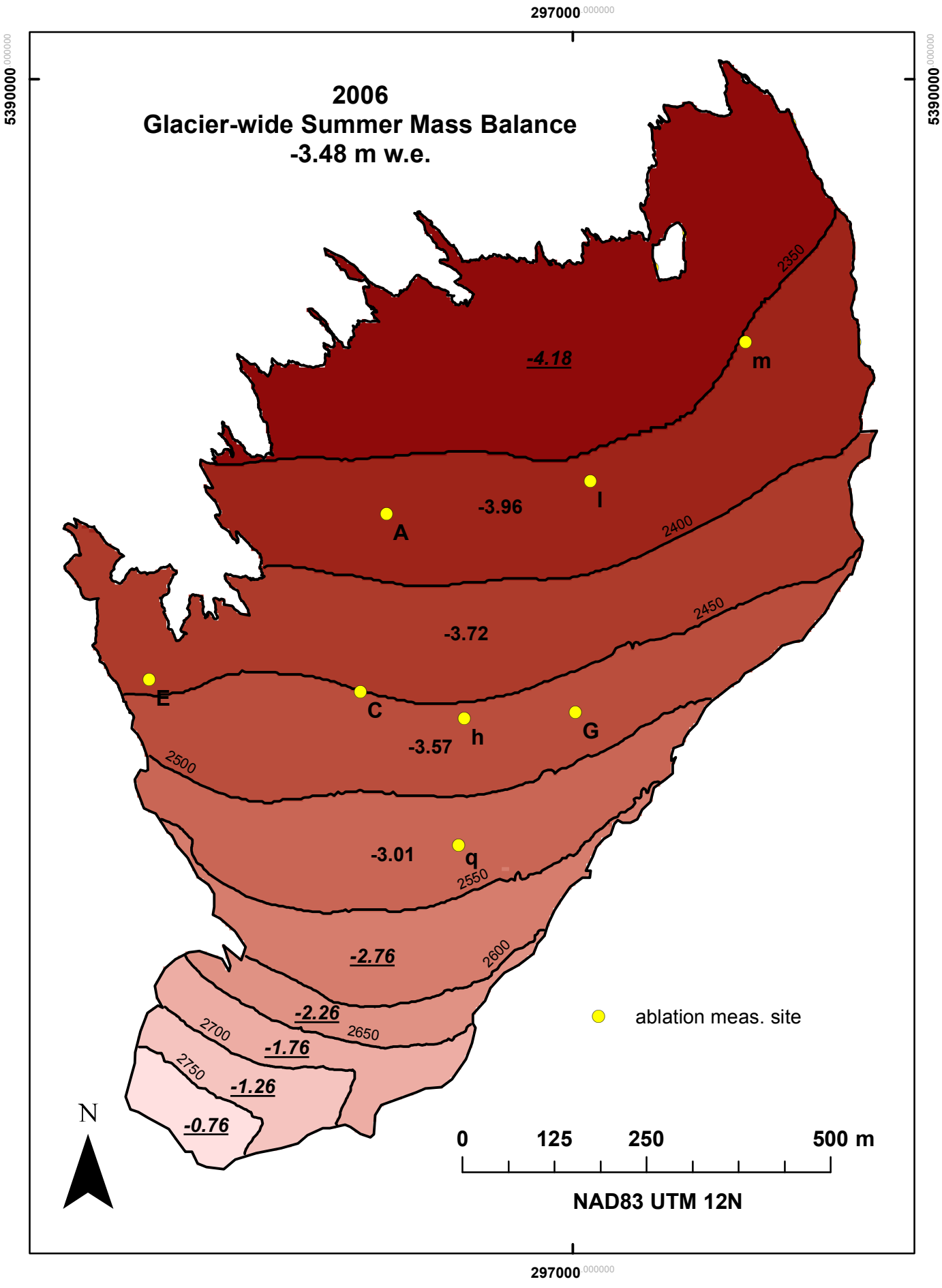
2005
Glacier-wide Summer Mass Balance
-3.25 m w.e.
-3.50
A
2400
-3.30
C
2500
-2.99
D
2550
-2.92
2600
-2.77
2650
2700
-2.62
2750
-2.47
-2.32
ablation meas. point
N
0
125
250
500 m
NAD83 UTM 12N
297000 000000
5390000 000000


297000.000000
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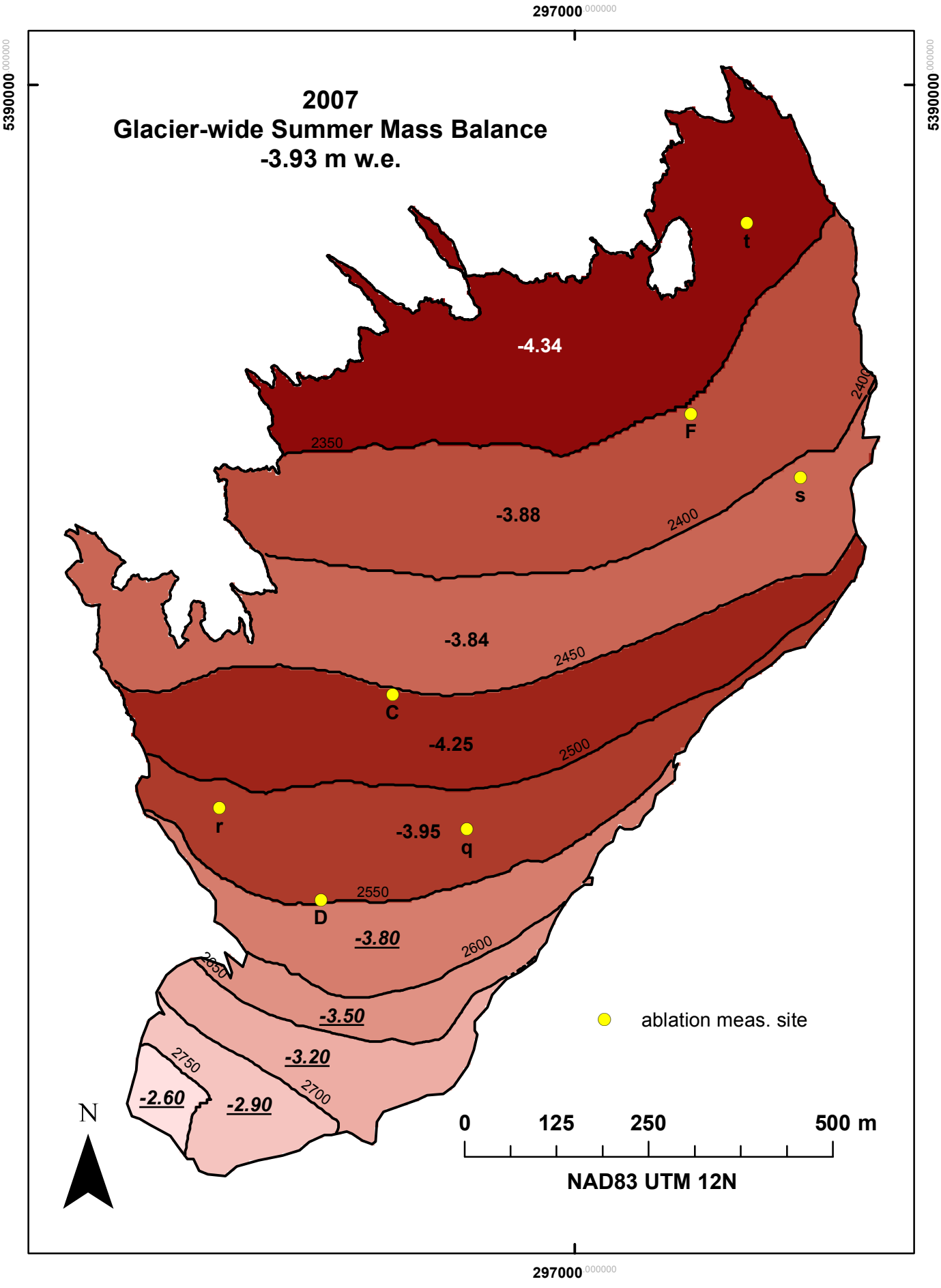
2006
Glacier-wide Summer Mass Balance
-3.48 m w.e.
-4.18
-3.96
-3.72
-3.57
-3.01
-2.76
-2.26
-1.76
-1.26
-0.76
2350
2400
2450
2500
2550
2600
2650
2700
2750
m
l
A
E
C
h
G
q
ablation meas. site
N
0
125
250
500 m
NAD83 UTM 12N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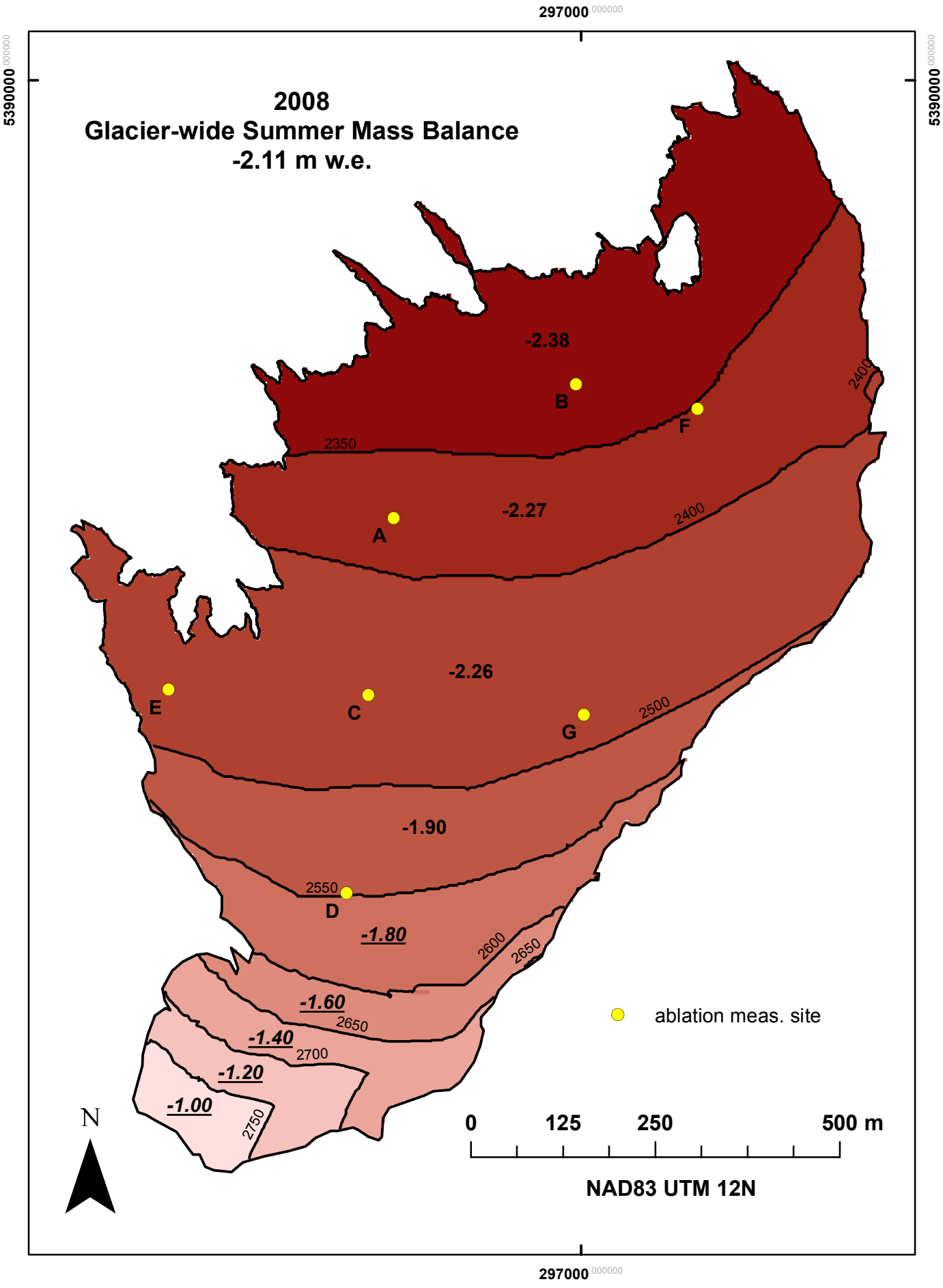
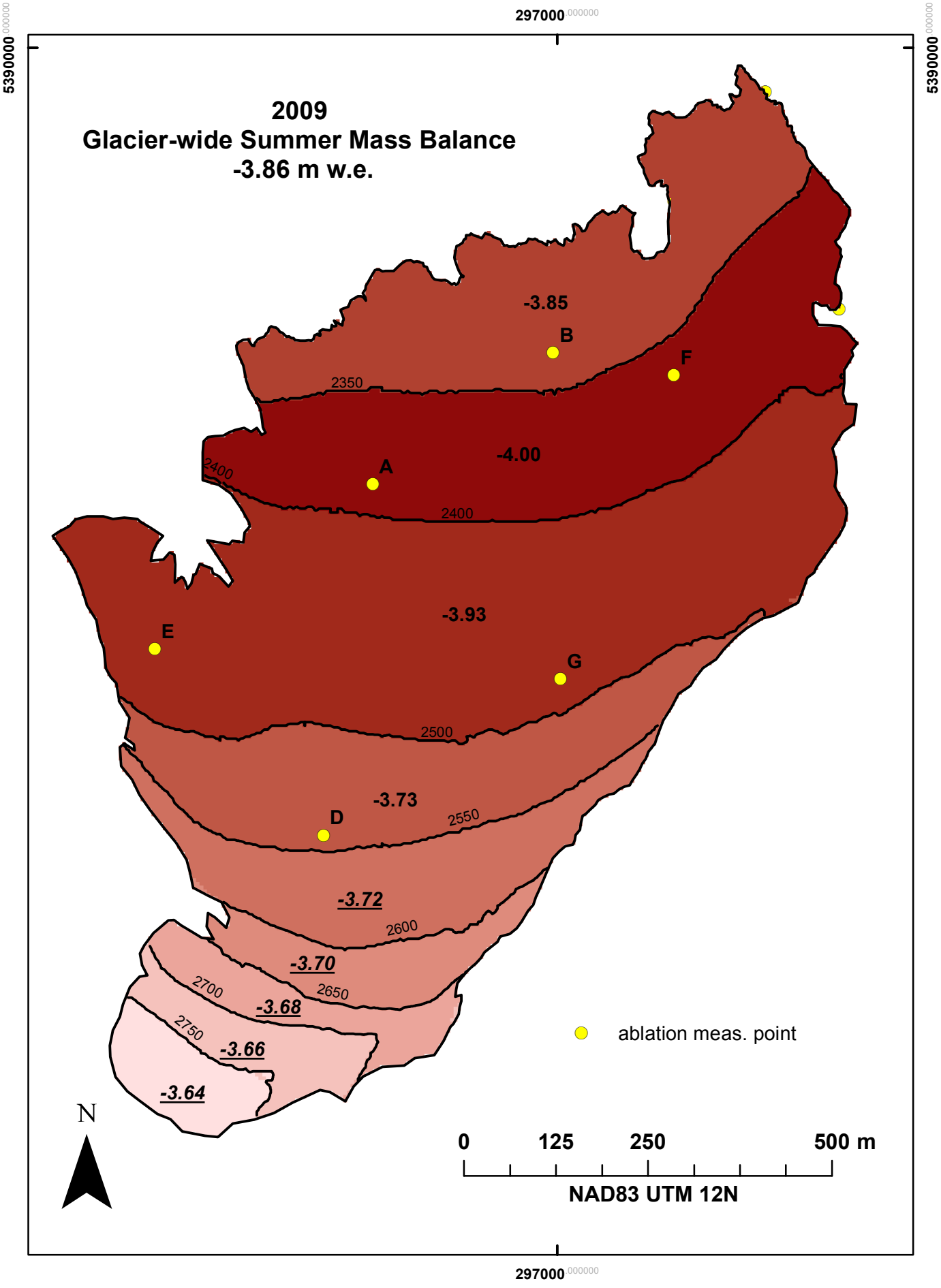
5390000.000000
2007
Glacier-wide Summer Mass Balance
-3.93 m w.e.
-4.34
-3.88
-3.84
-4.25
-3.95
-3.80
-3.50
-3.20
-2.90
-2.60
2350
2400
2450
2500
2550
2600
2650
2700
2750
t
F
s
C
r
q
D
ablation meas. site
N
0
125
250
500 m
NAD83 UTM 12N


297000 000000
5390000 000000
2008
Glacier-wide Summer Mass Balance
-2.11 m w.e.
-2.38
B
F
2350
2400
-2.27
A
2400
-2.26
E
C
G
2500
-1.90
2550
D
-1.80
2600
2650
-1.60
2650
-1.40
2700
-1.20
-1.00
2750
ablation meas. site
N
0
125
250
500 m
NAD83 UTM 12N
297000 000000
5390000 000000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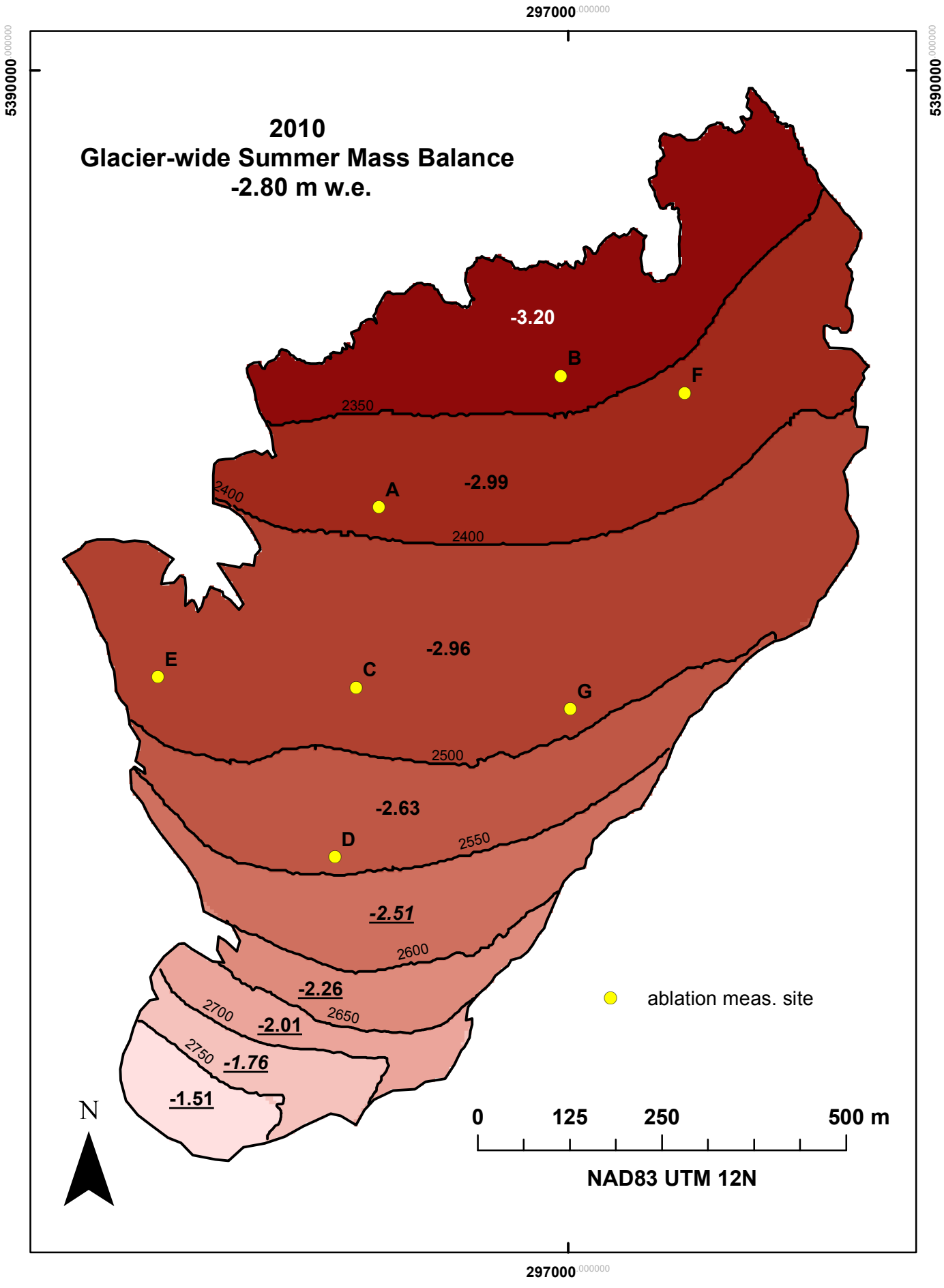
5390000 000000
2009
Glacier-wide Summer Mass Balance
-3.86 m w.e.
-3.85
B
F
2350
-4.00
A
2400
2400
-3.93
E
G
2500
-3.73
D
2550
-3.72
2600
-3.70
2700
2650
-3.68
2750
-3.66
-3.64
ablation meas. point
N
0
125
250
500 m
NAD83 UTM 12N
297000 000000
5390000 000000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2010
Glacier-wide Summer Mass Balance
-2.80 m w.e.
-3.20
B
F
2350
-2.99
A
2400
2400
-2.96
E
C
G
2500
-2.63
D
2550
-2.51
2600
-2.26
2700
2650
-2.01
2750
-1.76
-1.51
ablation meas. site
N
0
125
250
500 m
NAD83 UTM 12N
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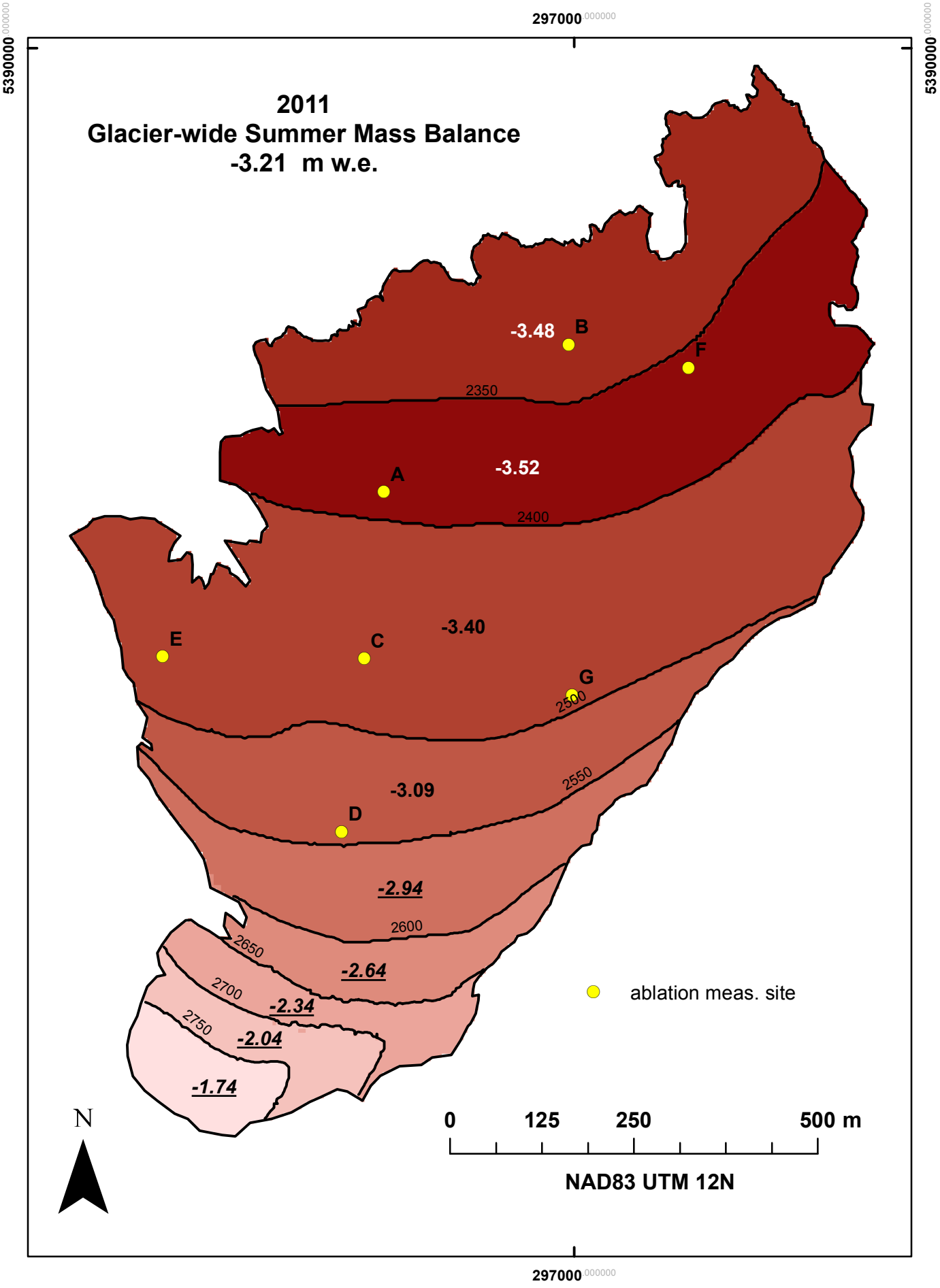
5390000 000000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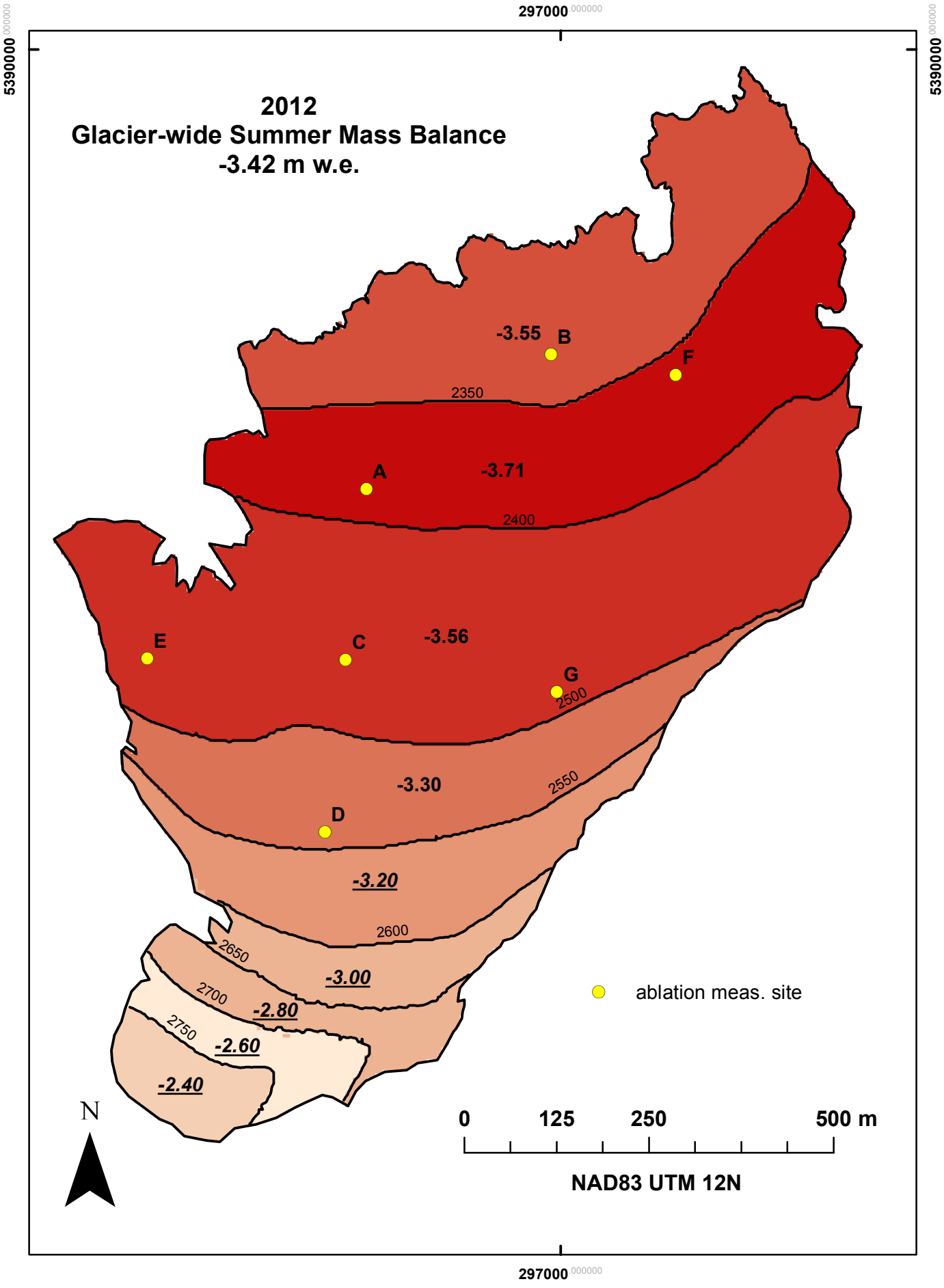
2011
Glacier-wide Summer Mass Balance
-3.21 m w.e.
-3.48
B
F
2350
-3.52
A
2400
-3.40
E
C
G
2500
-3.09
2550
D
-2.94
2600
2650
-2.64
2700
-2.34
2750
-2.04
-1.74
ablation meas. site
N
0
125
250
500 m
NAD83 UTM 12N
297000 000000
5390000 000000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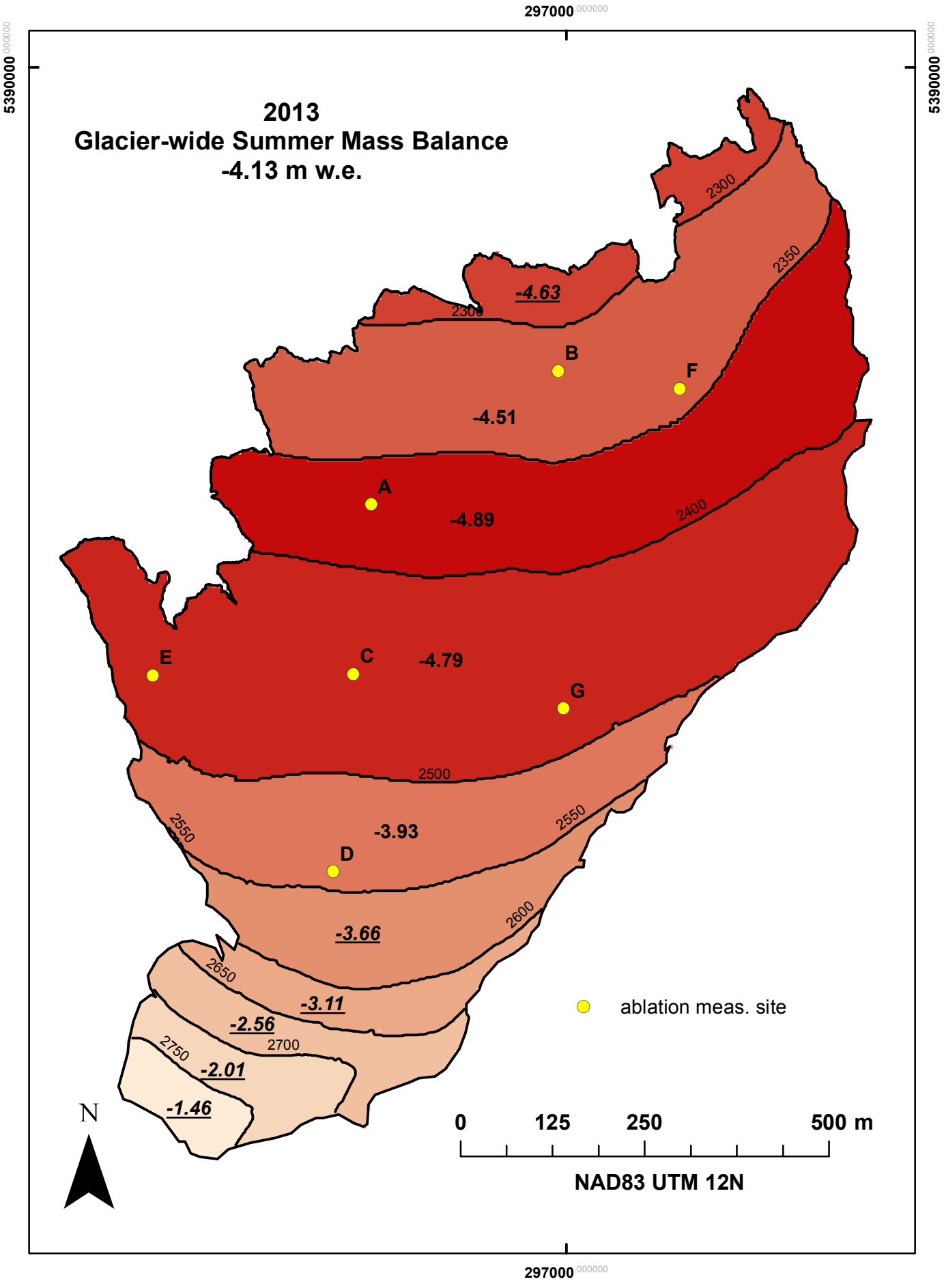
2012
Glacier-wide Summer Mass Balance
-3.42 m w.e.
-3.55
B
F
2350
A
-3.71
2400
E
C
-3.56
G
2500
-3.30
2550
D
-3.20
2600
2650
-3.00
2700
-2.80
2750
-2.60
-2.40
ablation meas. site
N
0
125
250
500 m
NAD83 UTM 12N
297000 000000
5390000 000000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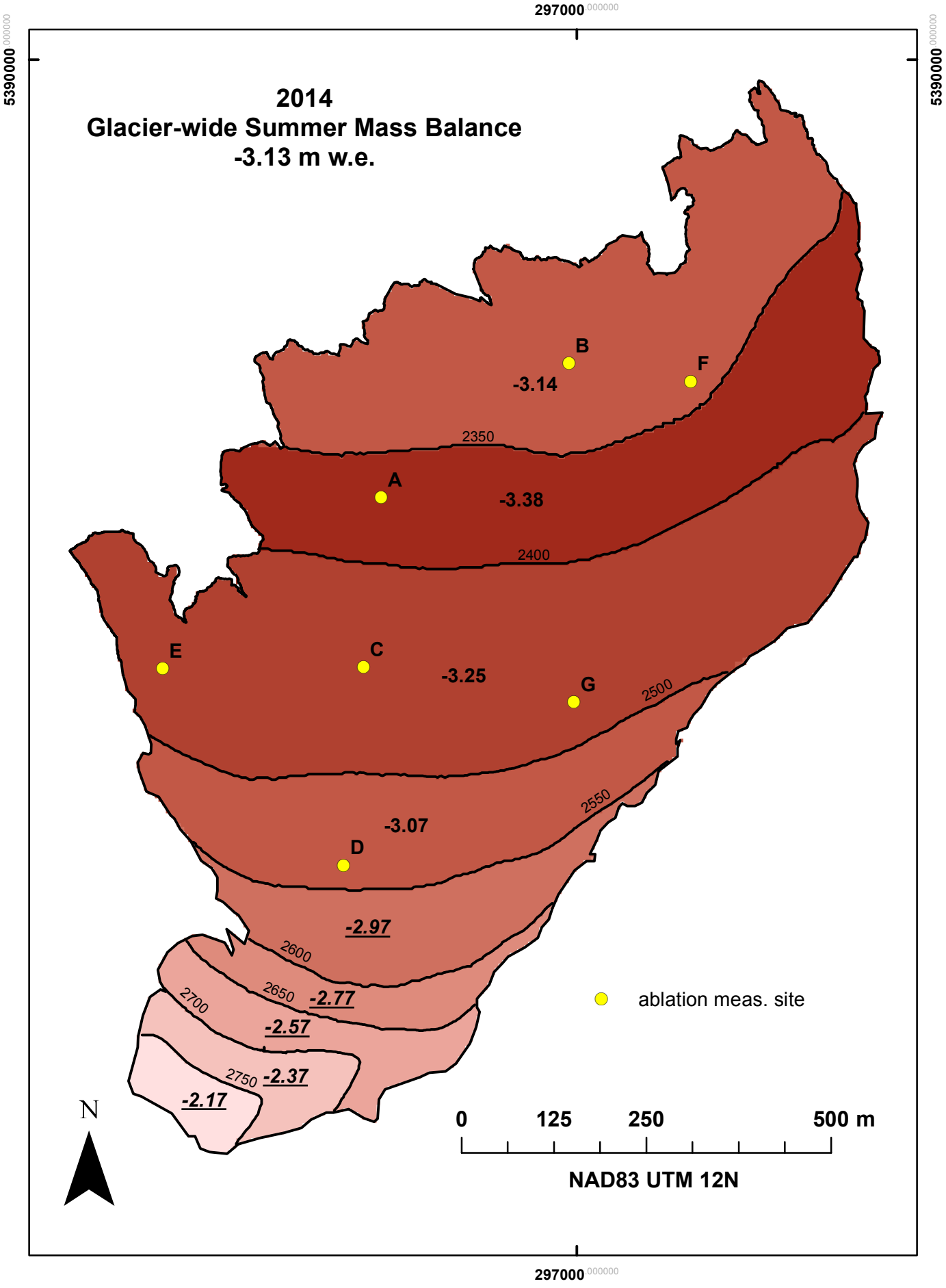
2013
Glacier-wide Summer Mass Balance
-4.13 m w.e.
2300
2350
-4.63
2300
B
F
-4.51
A
-4.89
2400
E
C
-4.79
G
2500
2550
-3.93
2550
D
2600
-3.66
2650
-3.11
-2.56
2700
2750
-2.01
-1.46
ablation meas. site
N
0
125
250
500 m
NAD83 UTM 12N
297000.000000
5390000.000000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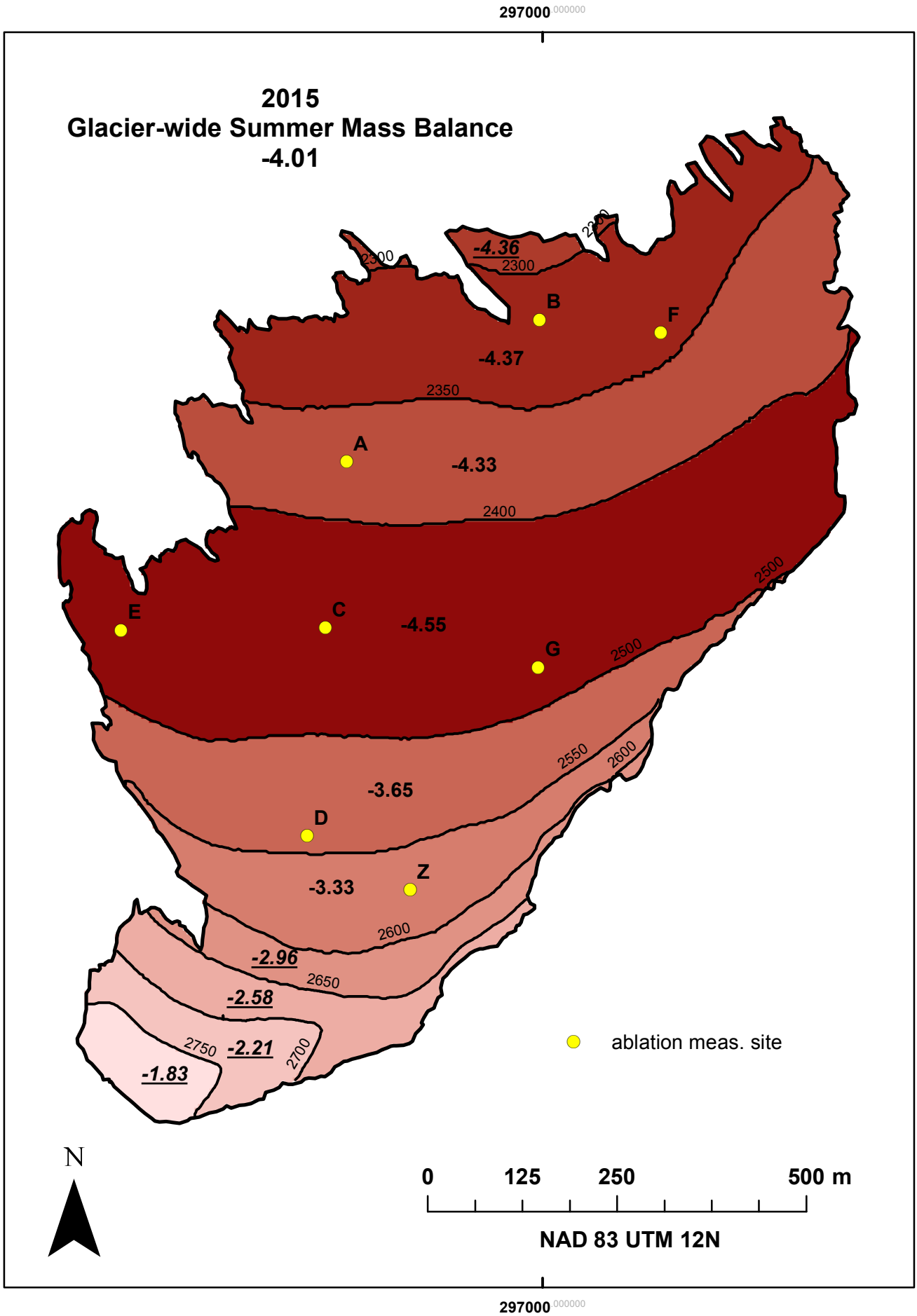
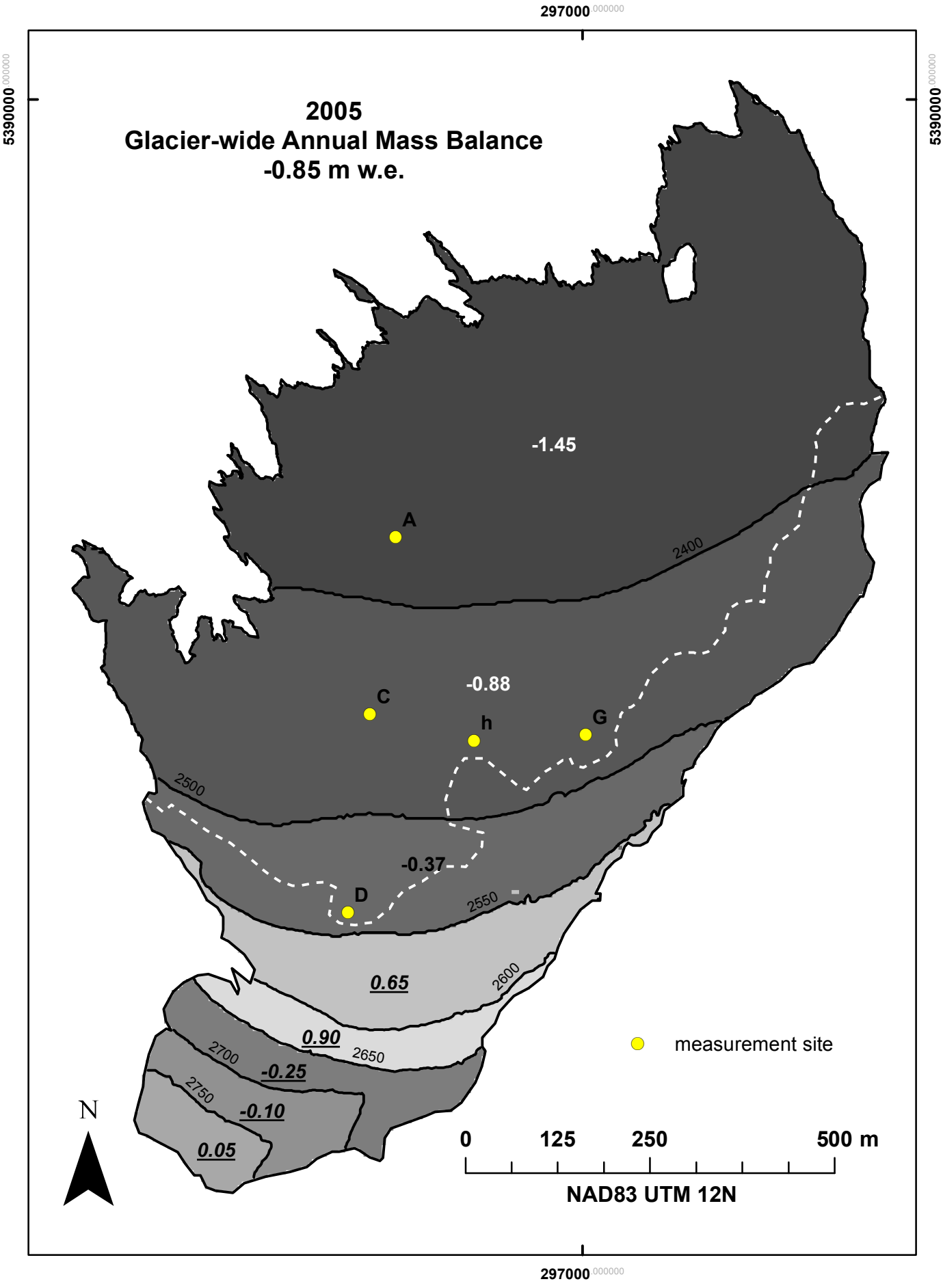
5390000.000000
2014
Glacier-wide Summer Mass Balance
-3.13 m w.e.
B
F
-3.14
2350
A
-3.38
2400
E
C
-3.25
G
2500
2550
-3.07
D
-2.97
2600
2650
-2.77
2700
-2.57
2750
-2.37
-2.17
ablation meas. site
N
0
125
250
500 m
NAD83 UTM 12N
297000.000000
5390000.000000


297000 000000
2015
Glacier-wide Summer Mass Balance
-4.01
-4.36
2300
2300
2200
B
F
-4.37
2350
A
-4.33
2400
2500
E
C
-4.55
G
2500
2550
2600
-3.65
D
Z
-3.33
2600
-2.96
2650
-2.58
2750
-2.21
2700
-1.83
ablation meas. site
N
0
125
250
500 m
NAD 83 UTM 12N
297000 000000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2005
Glacier-wide Annual Mass Balance
-0.85 m w.e.
-1.45
A
2400
-0.88
C
h
G
2500
-0.37
D
2550
0.65
2600
0.90
2650
2700
-0.25
2750
-0.10
0.05
measurement site
N
0
125
250
500 m
NAD83 UTM 12N
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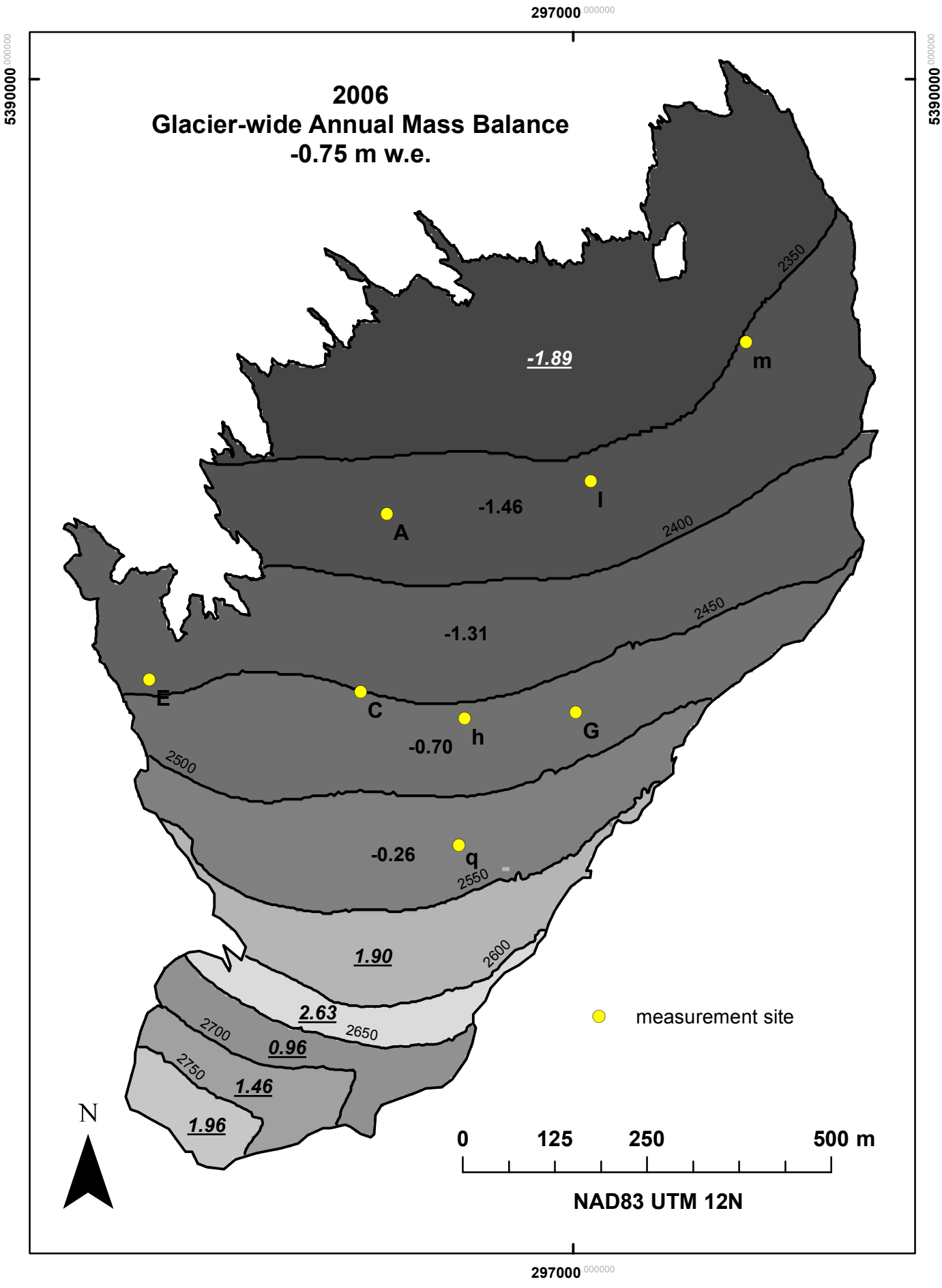
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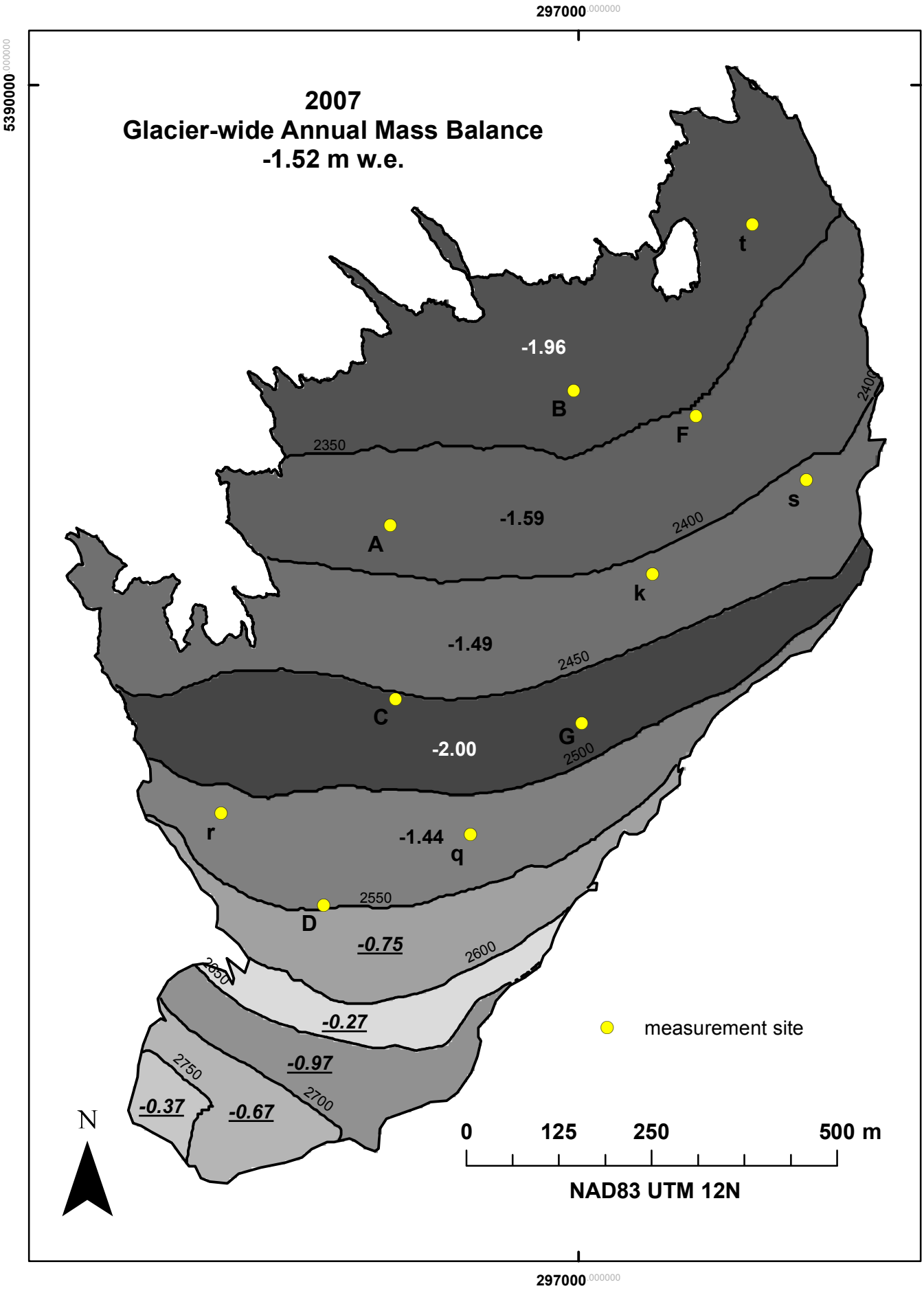
2006
Glacier-wide Annual Mass Balance
-0.75 m w.e.
-1.89
-1.46
-1.31
-0.70
-0.26
1.90
2.63
0.96
1.46
1.96
2350
2400
2450
2500
2550
2600
2650
2700
2750
m
l
A
E
C
h
G
q
measurement site
N
0
125
250
500 m
NAD83 UTM 12N
297000.000000
5390000.000000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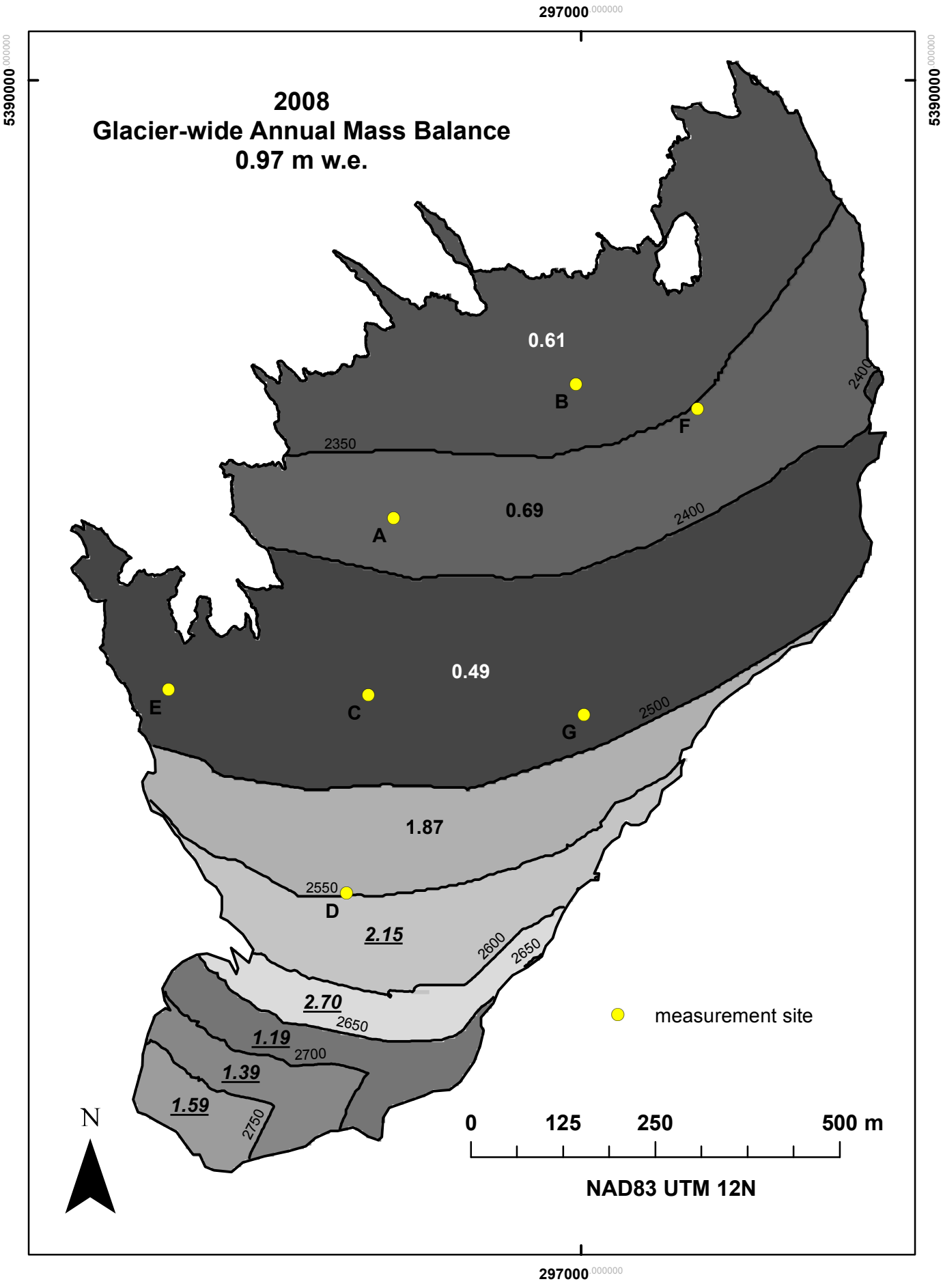
2007
Glacier-wide Annual Mass Balance
-1.52 m w.e.
-1.96
-1.59
-1.49
-2.00
-1.44
-0.75
-0.27
-0.97
-0.37
-0.67
2350
2400
2450
2500
2550
2600
2650
2700
2750
t
B
F
s
A
k
C
G
r
q
D
measurement site
N
0
125
250
500 m
NAD83 UTM 12N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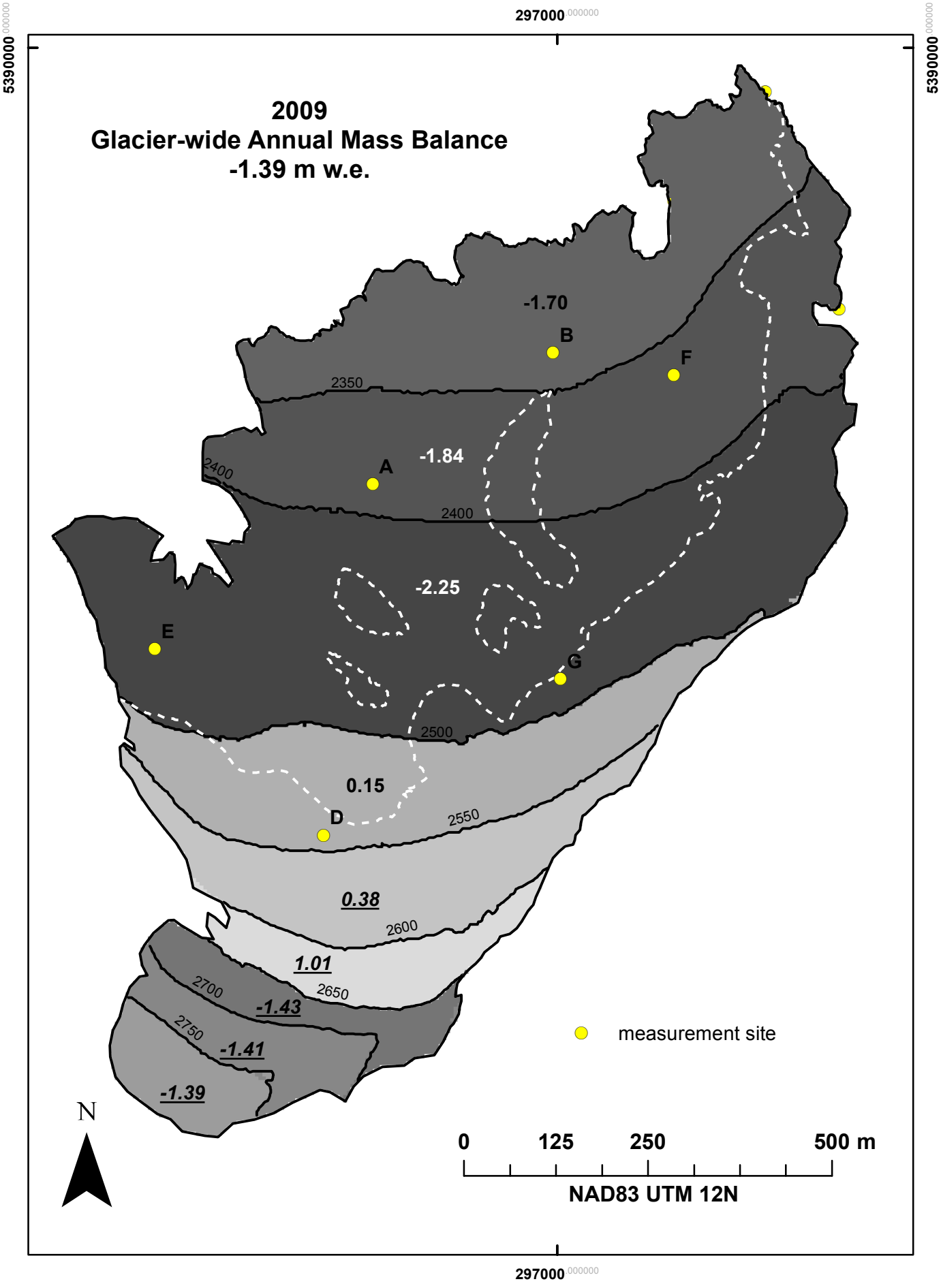
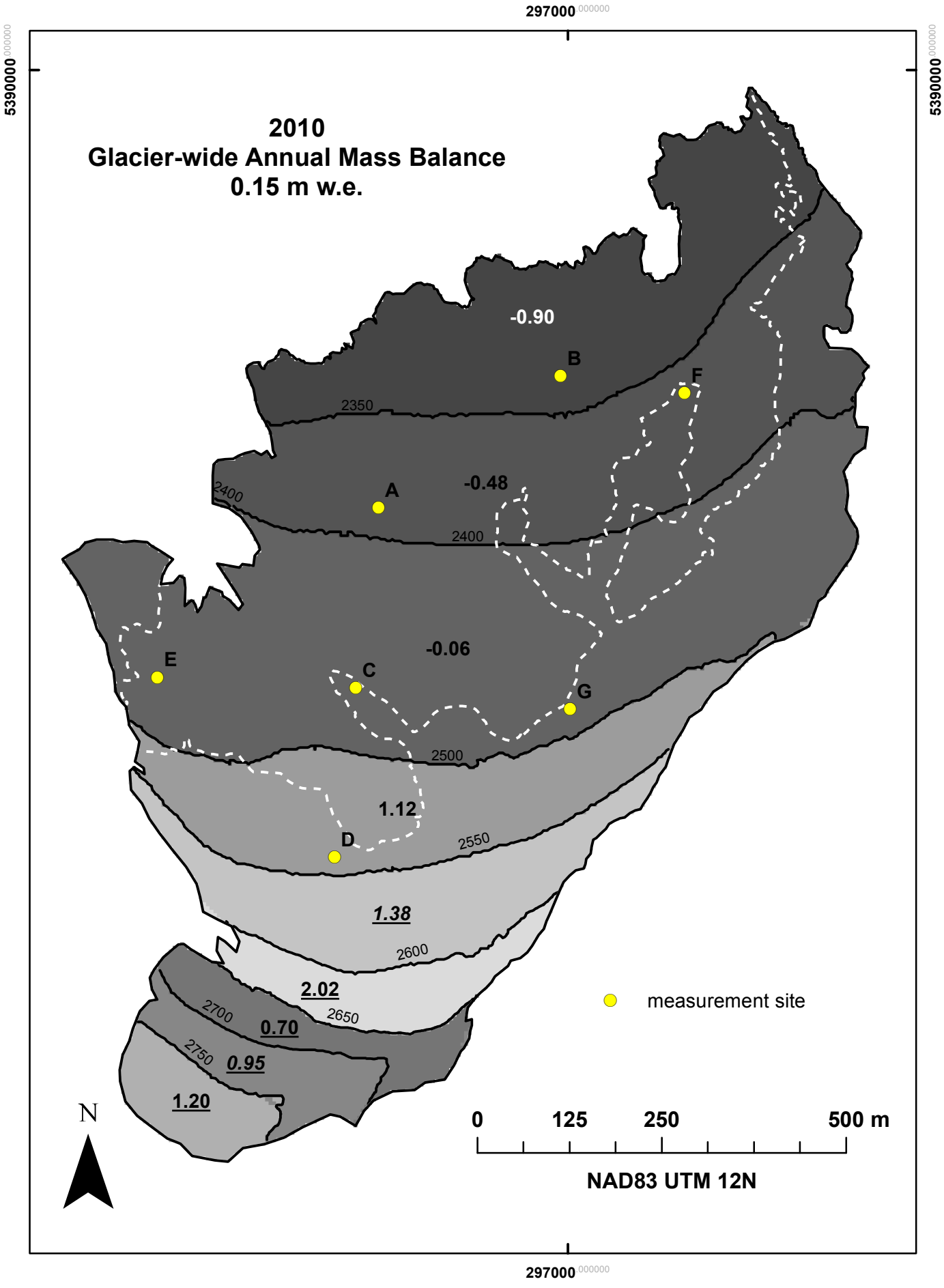
2008
Glacier-wide Annual Mass Balance
0.97 m w.e.
0.61
B
F
2350
2400
0.69
A
2400
0.49
E
C
G
2500
1.87
2550
D
2.15
2600
2650
2.70
2650
1.19
2700
1.39
1.59
2750
measurement site
N
0
125
250
500 m
NAD83 UTM 12N
297000 000000
5390000 000000


2009
Glacier-wide Annual Mass Balance
-1.39 m w.e.
297000 000000
5390000 000000
-1.70
B
F
2350
-1.84
A
2400
2400
-2.25
E
G
2500
0.15
D
2550
0.38
2600
1.01
2650
2700
-1.43
2750
-1.41
-1.39
measurement site
N
0
125
250
500 m
NAD83 UTM 12N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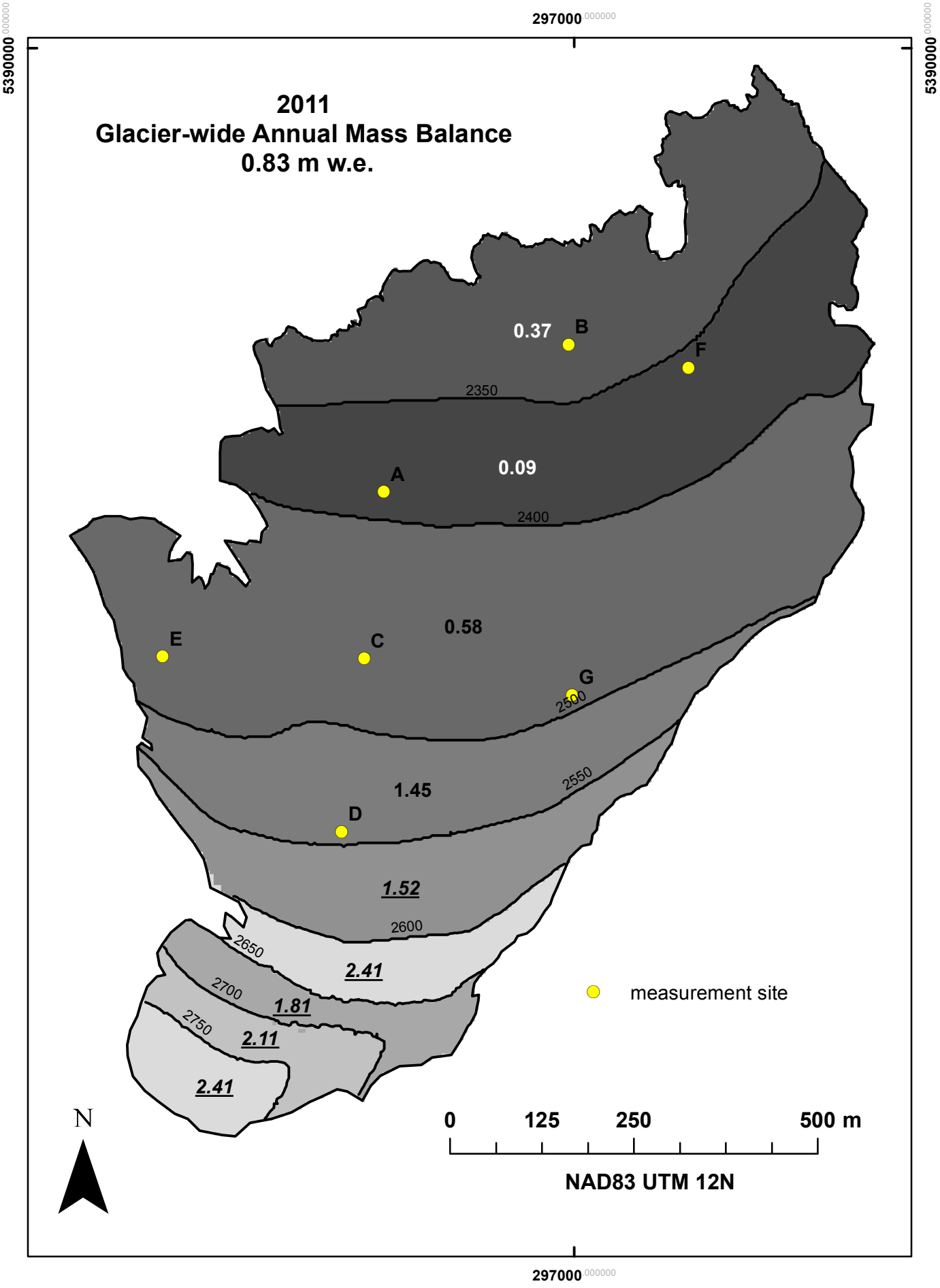
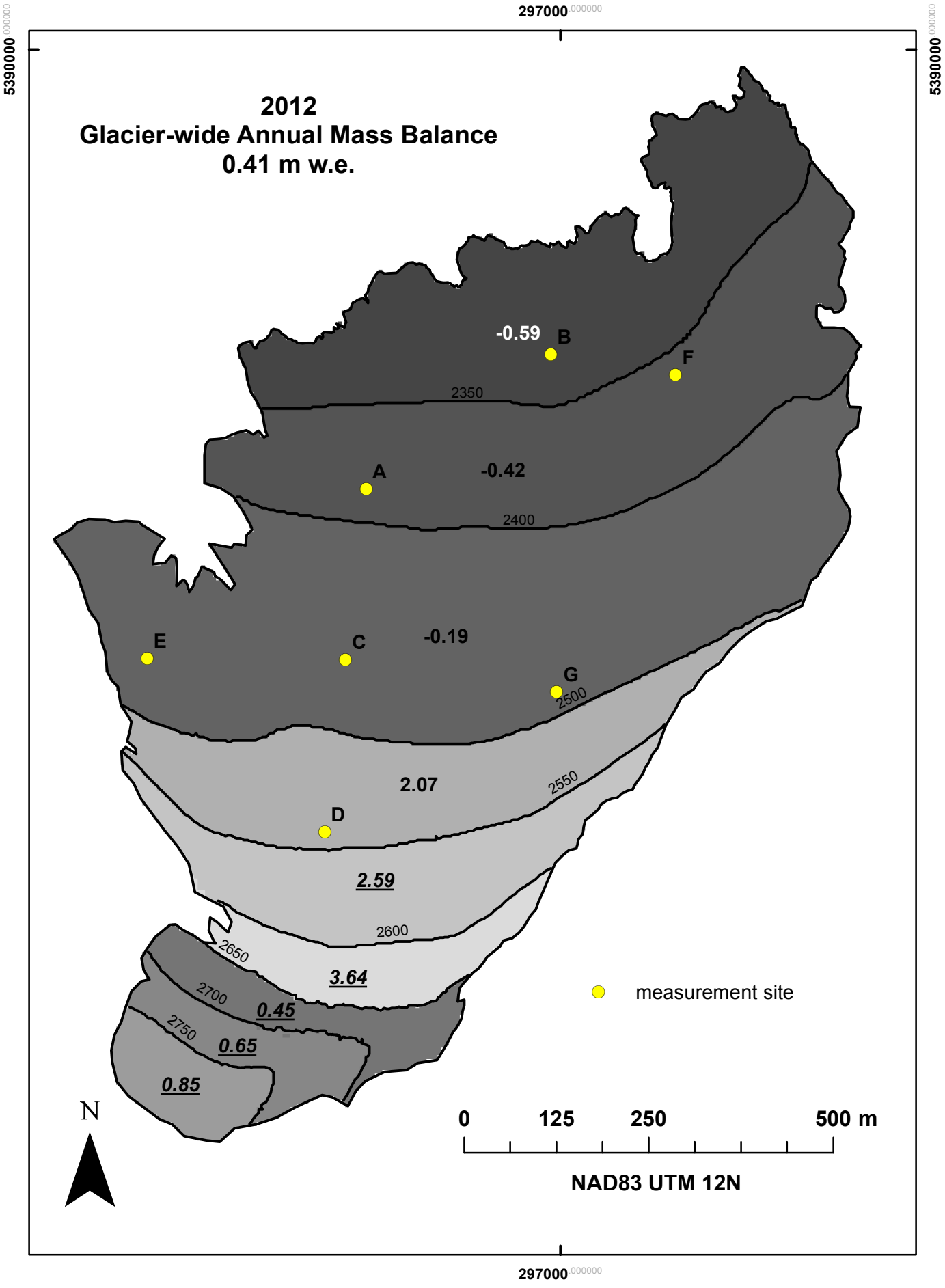
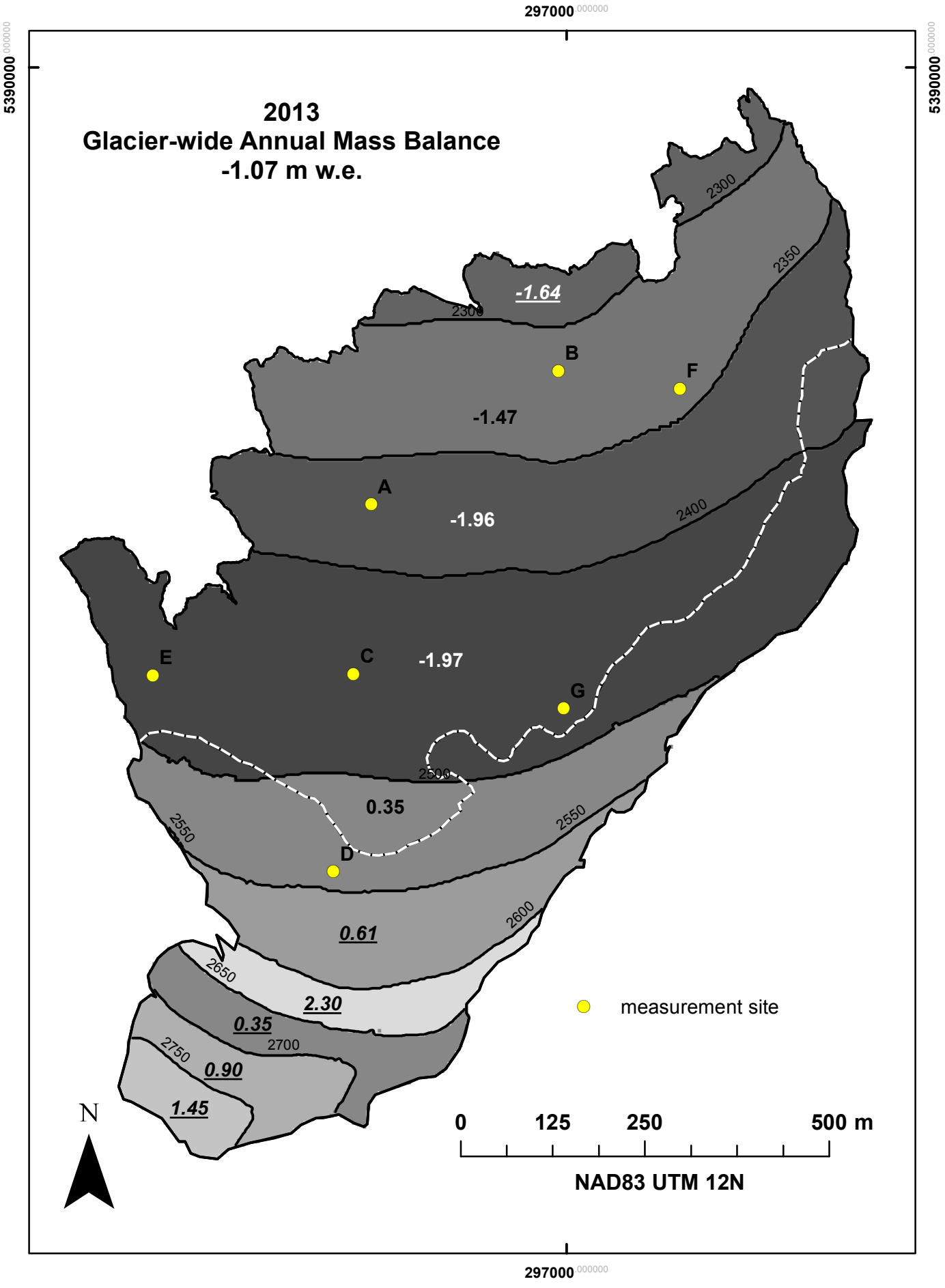
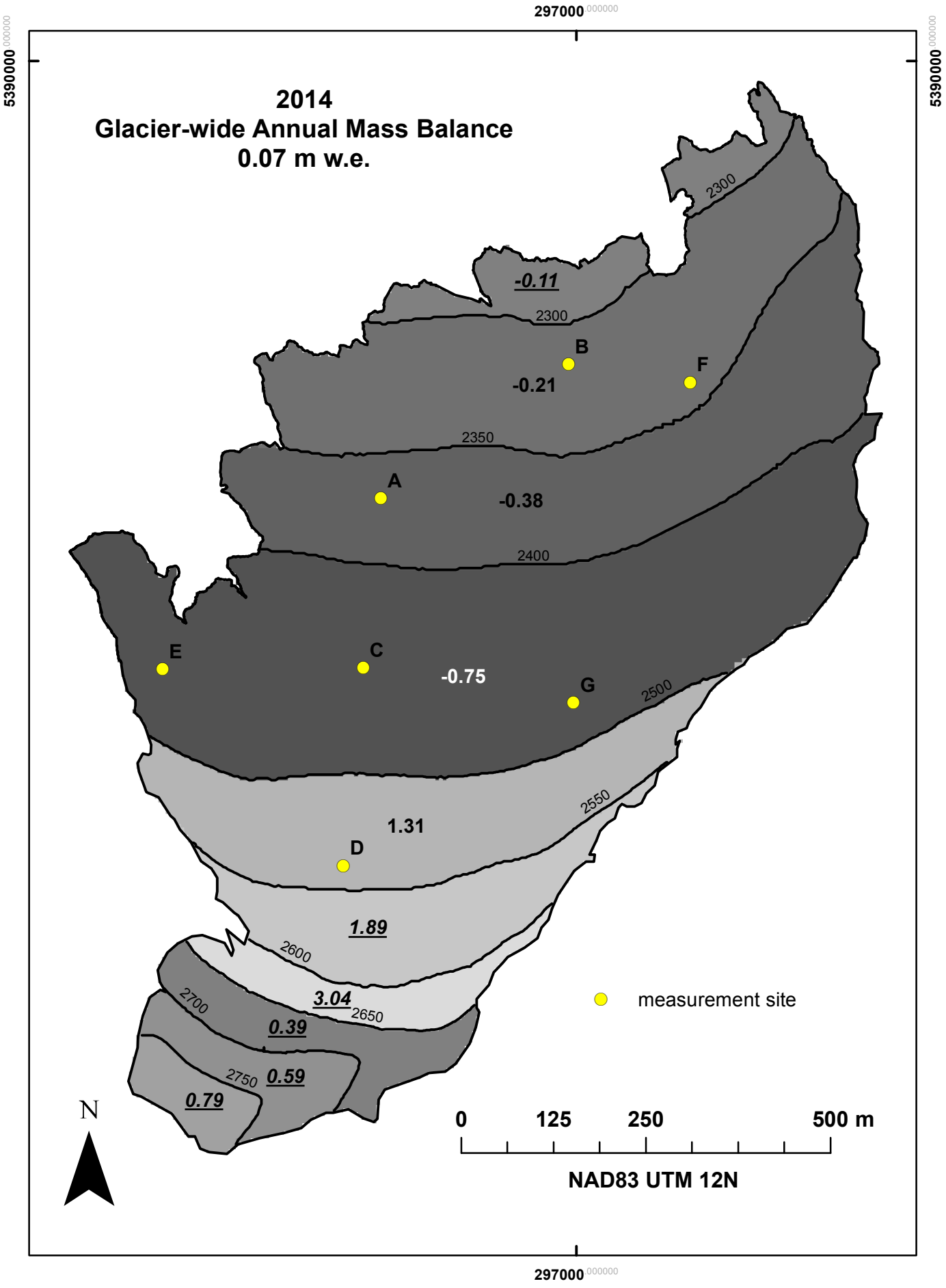
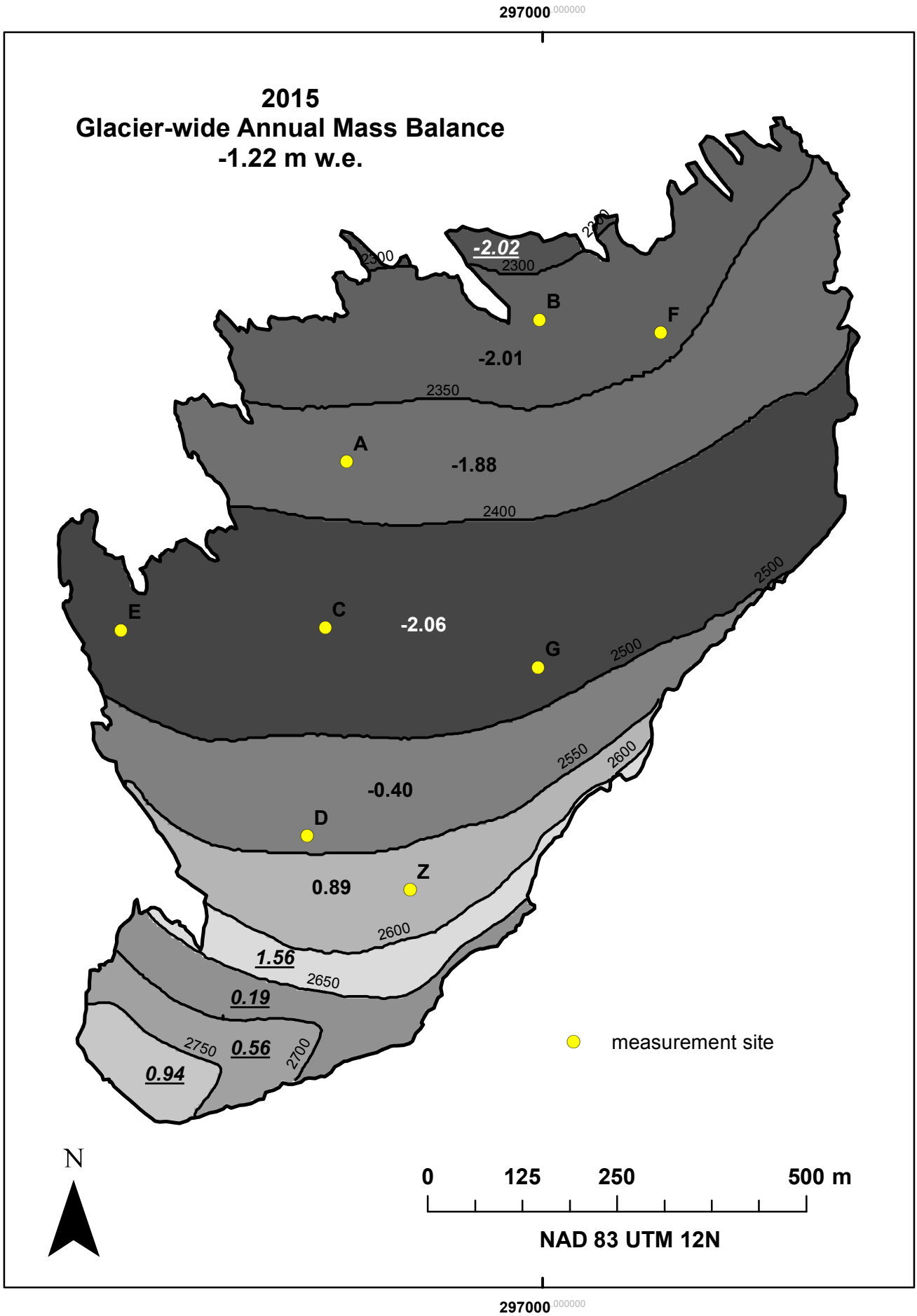
2010
Glacier-wide Annual Mass Balance
0.15 m w.e.
-0.90
B
F
2350
-0.48
A
2400
2400
-0.06
E
C
G
2500
1.12
D
2550
1.38
2600
2.02
2650
2700
0.70
2750
0.95
1.20
measurement site
N
0
125
250
500 m
NAD83 UTM 12N
297000 000000
5390000 000000


297000 000000
5390000 000000
2011
Glacier-wide Annual Mass Balance
0.83 m w.e.
0.37
B
F
2350
0.09
A
2400
0.58
E
C
G
2500
1.45
2550
D
1.52
2600
2650
2.41
2700
1.81
2750
2.11
2.41
measurement site
N
0
125
250
500 m
NAD83 UTM 12N
297000 000000
5390000 000000


297000 000000
5390000 000000
2012
Glacier-wide Annual Mass Balance
0.41 m w.e.
-0.59
B
F
2350
A
-0.42
2400
E
C
-0.19
G
2500
2.07
2550
D
2.59
2600
2650
3.64
2700
0.45
2750
0.65
0.85
measurement site
N
0
125
250
500 m
NAD83 UTM 12N
297000 000000
5390000 000000


297000.000000
5390000.000000
2013
Glacier-wide Annual Mass Balance
-1.07 m w.e.
2300
2350
-1.64
2300
B
F
-1.47
A
-1.96
2400
E
C
-1.97
G
2500
0.35
2550
2550
D
0.61
2600
2650
2.30
0.35
2700
2750
0.90
1.45
measurement site
N
0
125
250
500 m
NAD83 UTM 12N
297000.000000
5390000.000000


297000.000000
5390000.000000
2014
Glacier-wide Annual Mass Balance
0.07 m w.e.
2300
-0.11
2300
B
F
-0.21
2350
A
-0.38
2400
E
C
-0.75
G
2500
2550
1.31
D
1.89
2600
3.04
2650
2700
0.39
2750
0.59
0.79
measurement site
N
0
125
250
500 m
NAD83 UTM 12N
297000.000000
5390000.000000


297000 000000
2015
Glacier-wide Annual Mass Balance
-1.22 m w.e.
-2.02
2300
2300
2200
B
F
-2.01
2350
A
-1.88
2400
2500
E
C
-2.06
G
2500
2550
2600
-0.40
D
Z
0.89
2600
1.56
2650
0.19
2750
0.56
2700
0.94
measurement site
N
0
125
250
500 m
NAD 83 UTM 12N
297000 000000

Supplement – Tables of Point Balance Data

Table S1: 2005 snow depths

Coordinates: *NAD83 UTM Zone 12N*

2005

Point ID	Measurement Group	Date Measured	GPS	Easting	Northing	Elev (m)	Measured Depth (m)	Density (kg m^{-3})	b_w
A	stake site	24-Jun	uncorrected	296,747	5,389,408	2,362	3.59	571	2.05
C	stake site	24-Jun	uncorrected	296,712	5,389,168	2,447	4.20	575	2.42
D	stake site	24-Jun	uncorrected	296,682	5,388,899	2,525	4.55	577	2.63
1	transect 1	23-Jun	uncorrected	296,547	5,389,364	2,390	5.95	585	3.48
2	transect 1	23-Jun	uncorrected	296,600	5,389,347	2,391	3.60	571	2.06
3	transect 1	23-Jun	uncorrected	296,653	5,389,331	2,392	4.65	578	2.69
4	transect 1	23-Jun	uncorrected	296,705	5,389,315	2,393	3.90	573	2.23
5	transect 1	23-Jun	uncorrected	296,757	5,389,299	2,395	3.73	572	2.13
6	transect 1	23-Jun	uncorrected	296,809	5,389,283	2,398	2.63	562	1.48
7	transect 1	23-Jun	uncorrected	296,864	5,389,269	2,405	2.95	565	1.67
8	transect 1	23-Jun	uncorrected	296,918	5,389,254	2,410	5.05	580	2.93
9	transect 1	23-Jun	uncorrected	296,974	5,389,239	2,405	3.33	569	1.89
10	transect 1	23-Jun	uncorrected	297,026	5,389,225	2,421	3.92	573	2.25
11	transect 1	23-Jun	uncorrected	297,079	5,389,210	2,442	4.54	577	2.62
12	transect 1	23-Jun	uncorrected	297,133	5,389,196	2,450	3.74	572	2.14
13	transect 1	23-Jun	uncorrected	297,184	5,389,183	2,470	5.93	585	3.47
1	transect 2	23-Jun	uncorrected	297,236	5,389,202	2,474	5.20	581	3.02
2	transect 2	23-Jun	uncorrected	297,240	5,389,229	2,464	5.60	583	3.26
3	transect 2	23-Jun	uncorrected	297,244	5,389,255	2,455	6.25	586	3.66
4	transect 2	23-Jun	uncorrected	297,248	5,389,281	2,444	4.45	577	2.57
5	transect 2	23-Jun	uncorrected	297,252	5,389,310	2,436	4.55	577	2.63
6	transect 2	23-Jun	uncorrected	297,256	5,389,337	2,427	4.55	577	2.63
7	transect 2	23-Jun	uncorrected	297,264	5,389,392	2,408	4.57	577	2.64
8	transect 2	23-Jun	uncorrected	297,271	5,389,446	2,393	3.55	570	2.03
9	transect 2	23-Jun	uncorrected	297,277	5,389,501	2,381	3.35	569	1.91
10	transect 2	23-Jun	uncorrected	297,283	5,389,556	2,369	3.50	570	2.00
11	transect 2	23-Jun	uncorrected	297,288	5,389,610	2,364	3.72	572	2.13
12	transect 2	23-Jun	uncorrected	297,293	5,389,665	2,356	3.40	569	1.94
14	transect 2	23-Jun	uncorrected	297,302	5,389,776	2,338	3.45	570	1.97
15	transect 2	23-Jun	uncorrected	297,307	5,389,829	2,326	3.32	569	1.89
16	transect 2	23-Jun	uncorrected	297,310	5,389,886	2,317	3.80	572	2.17
17	transect 2	23-Jun	uncorrected	297,282	5,389,883	2,309	3.05	566	1.73
18	transect 2	23-Jun	uncorrected	297,229	5,389,885	2,287	2.76	564	1.56
1	transect 3	23-Jun	uncorrected	297,229	5,389,832	2,301	3.08	567	1.74
2	transect 3	23-Jun	uncorrected	297,227	5,389,779	2,317	2.95	565	1.67
3	transect 3	23-Jun	uncorrected	297,186	5,389,744	2,316	2.54	561	1.43
4	transect 3	23-Jun	uncorrected	297,141	5,389,709	2,314	2.40	560	1.34
5	transect 3	23-Jun	uncorrected	297,097	5,389,678	2,310	2.83	564	1.60
6	transect 3	23-Jun	uncorrected	297,049	5,389,649	2,309	2.88	565	1.63
7	transect 3	23-Jun	uncorrected	297,002	5,389,620	2,310	2.97	566	1.68
8	transect 3	23-Jun	uncorrected	296,953	5,389,595	2,317	2.94	565	1.66

9	transect 3	23-Jun	uncorrected	296,904	5,389,569	2,323	2.73	563	1.54
10	transect 3	23-Jun	uncorrected	296,854	5,389,543	2,329	3.40	569	1.94
11	transect 3	23-Jun	uncorrected	296,804	5,389,517	2,334	3.41	569	1.94
12	transect 3	23-Jun	uncorrected	296,755	5,389,490	2,340	3.47	570	1.98
13	transect 3	23-Jun	uncorrected	296,706	5,389,463	2,347	3.40	569	1.94
13.1	transect 3	23-Jun	uncorrected	297,297	5,389,720	2,347	3.63	571	2.07
14	transect 3	23-Jun	uncorrected	296,657	5,389,438	2,356	3.49	570	1.99
15	transect 3	23-Jun	uncorrected	296,608	5,389,414	2,365	3.09	567	1.75
16	transect 3	23-Jun	uncorrected	296,556	5,389,395	2,379	5.78	584	3.37
1	annual transect	24-Jun	uncorrected	296,723	5,389,256	2,417	6.00	585	3.51
2	annual transect	24-Jun	uncorrected	296,716	5,389,208	2,436	4.45	577	2.57
3	annual transect	24-Jun	uncorrected	296,712	5,389,157	2,450	4.15	575	2.39
4	annual transect	24-Jun	uncorrected	296,703	5,389,107	2,469	2.63	562	1.48
5	annual transect	24-Jun	uncorrected	296,697	5,389,057	2,488	2.38	559	1.33
6	annual transect	24-Jun	uncorrected	296,691	5,389,005	2,504	2.70	563	1.52
7	annual transect	24-Jun	uncorrected	296,687	5,388,955	2,518	3.88	573	2.22
8	annual transect	24-Jun	uncorrected	296,683	5,388,901	2,533	4.79	579	2.77
9	annual transect	24-Jun	uncorrected	296,677	5,388,851	2,567	5.81	584	3.39
10	annual transect	24-Jun	uncorrected	296,671	5,388,802	2,570	4.15	575	2.39
13	annual transect	24-Jun	uncorrected	296,739	5,389,355	2,380	3.62	571	2.07
14	annual transect	24-Jun	uncorrected	296,745	5,389,406	2,365	3.15	567	1.79
15	annual transect	24-Jun	uncorrected	296,753	5,389,459	2,350	2.85	564	1.61
16	annual transect	24-Jun	uncorrected	296,760	5,389,512	2,336	3.55	570	2.03
17	annual transect	24-Jun	uncorrected	296,767	5,389,566	2,326	3.08	567	1.74
18	annual transect	24-Jun	uncorrected	296,776	5,389,619	2,314	2.69	563	1.51
19	annual transect	24-Jun	uncorrected	296,783	5,389,671	2,298	2.50	561	1.40
1	transect 5	24-Jun	uncorrected	296,648	5,388,850	2,553	6.80	588	4.00
2	transect 5	24-Jun	uncorrected	296,621	5,388,851	2,552	7.00	589	4.12
3	transect 5	24-Jun	uncorrected	296,594	5,388,852	2,554	6.85	589	4.03
4	transect 5	24-Jun	uncorrected	296,567	5,388,853	2,557	6.15	586	3.60
5	transect 5	24-Jun	uncorrected	296,543	5,388,852	2,567	5.43	582	3.16
6	transect 5	24-Jun	uncorrected	296,704	5,388,849	2,549	6.60	588	3.88
7	transect 5	24-Jun	uncorrected	296,736	5,388,852	2,552	7.00	589	4.12
8	transect 5	24-Jun	uncorrected	296,763	5,388,849	2,552	5.46	582	3.18
9	transect 5	24-Jun	uncorrected	296,789	5,388,848	2,554	5.21	581	3.03
10	transect 5	24-Jun	uncorrected	296,815	5,388,847	2,556	5.73	584	3.34
11	transect 5	24-Jun	uncorrected	296,841	5,388,843	2,562	7.00	589	4.12
12	transect 5	24-Jun	uncorrected	296,866	5,388,840	2,565	6.47	587	3.80
lower	density pit	25-Jun	uncorrected	296,747	5,389,410	2,360	3.10	567	1.76
upper	density pit	26-Jun	uncorrected	296,682	5,388,897	2,522	4.55	577	2.63
bare ice	bare ice	23-Jun	Corrected	296,530	5,389,176	2,459	0.00	0	0.00

Count:	82	82	82	82
Mean:	2417	4.10	566	2.36
Median:	2397	3.68	571	2.10
StdDev:	87	1.38	64	0.83
Min:	2287	0.00	0	0.00
Max:	2570	7.00	589	4.12
Range:	283	7.00	589	4.12

Table S2: 2006 snow depths
Coordinates: *NAD83 UTM Zone 12N*

2006

Point ID	Measurement Group	Date Measured	GPS	Easting	Northing	Elev (m)	Measured Depth (m)	Depth on June 8 (m)	Density (kg m^{-3})	b_w
A	stake site	26-Jun	corrected	296,747	5,389,410	2,360	4.07	4.64	578	2.68
C	stake site	26-Jun	uncorrected	296,712	5,389,168	2,447	4.43	4.97	580	2.88
D	stake site	28-Jun	uncorrected	296,682	5,388,899	2,525	5.55	6.15	586	3.60
h	stake site	26-Jun	uncorrected	296,853	5,389,132	2,453	4.83	5.43	582	3.16
G	stake site	26-Jun	uncorrected	297,004	5,389,140	2,467	3.88	4.48	577	2.58
i	stake site	26-Jun	corrected	297,262	5,389,277	2,465	7.00	7.54	591	4.46
j	stake site	26-Jun	corrected	297,271	5,389,447	2,407	4.10	4.64	578	2.68
k	stake site	26-Jun	corrected	297,098	5,389,343	2,409	3.45	4.99	580	2.89
l	stake site	27-Jun	corrected	297,024	5,389,454	2,364	3.50	4.07	574	2.34
m	stake site	26-Jun	corrected	297,235	5,389,643	2,359	3.48	3.99	574	2.29
n	stake site	26-Jun	corrected	297,255	5,389,891	2,309	3.80	4.33	576	2.49
o	stake site	26-Jun	corrected	297,004	5,389,650	2,311	3.38	3.92	573	2.25
E	stake site	26-Jun	corrected	296,425	5,389,185	2,447	2.82	3.39	569	1.93
p	stake site	28-Jun	corrected	296,525	5,388,968	2,530	6.85	7.45	591	4.40
q	stake site	28-Jun	corrected	296,845	5,388,960	2,533	4.15	4.75	578	2.75
2	transect 1	23-Jun	corrected	296,528	5,389,273	2,428	3.40	3.85	573	2.20
3	transect 1	23-Jun	corrected	296,593	5,389,270	2,432	3.50	3.95	573	2.26
4	transect 1	23-Jun	corrected	296,655	5,389,260	2,432	3.50	3.95	573	2.26
5	transect 1	23-Jun	corrected	296,717	5,389,245	2,432	3.24	3.69	572	2.11
6	transect 1	23-Jun	corrected	296,776	5,389,225	2,431	5.95	6.40	587	3.75
7	transect 1	23-Jun	corrected	296,837	5,389,218	2,435	3.50	3.95	573	2.26
8	transect 1	23-Jun	corrected	296,901	5,389,213	2,438	5.35	5.80	584	3.39
9	transect 1	23-Jun	corrected	296,965	5,389,212	2,441	5.70	6.15	586	3.60
11	transect 1	23-Jun	uncorrected	297,079	5,389,210	2,442	5.74	6.19	586	3.63
1	transect 106	8-Jun	corrected	297,295	5,389,940	2,317	6.02	6.02	585	3.52
2	transect 106	8-Jun	corrected	297,254	5,389,889	2,309	4.71	4.71	578	2.72
3	transect 106	8-Jun	corrected	297,207	5,389,839	2,307	4.67	4.67	578	2.70
4	transect 106	8-Jun	corrected	297,158	5,389,792	2,304	3.86	3.86	573	2.21
5	transect 106	8-Jun	corrected	297,108	5,389,744	2,308	3.54	3.54	570	2.02
6	transect 106	8-Jun	corrected	297,057	5,389,697	2,311	3.46	3.46	570	1.97
7	transect 106	8-Jun	corrected	297,006	5,389,652	2,310	4.29	4.29	576	2.47
8	transect 106	8-Jun	corrected	296,953	5,389,610	2,323	4.38	4.38	576	2.52
9	transect 106	8-Jun	corrected	296,901	5,389,567	2,335	4.02	4.02	574	2.31
10	transect 106	8-Jun	corrected	296,849	5,389,525	2,346	4.52	4.52	577	2.61
11	transect 106	8-Jun	corrected	296,798	5,389,476	2,364	4.57	4.57	577	2.64
12	transect 106	8-Jun	corrected	296,745	5,389,438	2,369	4.37	4.37	576	2.52
13	transect 106	8-Jun	corrected	296,692	5,389,396	2,384	5.28	5.28	581	3.07
14	transect 106	8-Jun	corrected	296,638	5,389,355	2,400	5.57	5.57	583	3.25
15	transect 106	8-Jun	corrected	296,584	5,389,315	2,416	3.23	3.23	568	1.83
16	transect 106	8-Jun	corrected	296,529	5,389,273	2,427	4.36	4.36	576	2.51

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17	transect 106	8-Jun	corrected	296,476	5,389,231	2,439	0.82	0.82	530	0.43
17.5	transect 106	8-Jun	corrected	296,450	5,389,208	2,441	2.44	2.44	560	1.37
18	transect 106	8-Jun	corrected	296,423	5,389,187	2,446	3.25	3.25	568	1.85
18.5	transect 106	8-Jun	corrected	296,396	5,389,167	2,454	3.89	3.89	573	2.23
1	transect 2	8-Jun	corrected	297,383	5,389,644	2,382	5.73	5.73	584	3.34
1.5	transect 2	8-Jun	corrected	297,360	5,389,619	2,378	6.10	6.10	585	3.57
2	transect 2	8-Jun	corrected	297,336	5,389,597	2,381	5.24	5.24	581	3.05
2.5	transect 2	8-Jun	corrected	297,312	5,389,571	2,386	5.37	5.37	582	3.12
3	transect 2	8-Jun	corrected	297,287	5,389,547	2,388	4.99	4.99	580	2.89
4	transect 2	8-Jun	corrected	297,239	5,389,497	2,387	4.17	4.17	575	2.40
5	transect 2	8-Jun	corrected	297,193	5,389,445	2,389	3.84	3.84	573	2.20
6	transect 2	8-Jun	corrected	297,146	5,389,394	2,399	4.52	4.52	577	2.61
7	transect 2	8-Jun	corrected	297,098	5,389,343	2,411	4.06	4.06	574	2.33
8	transect 2	8-Jun	corrected	297,048	5,389,291	2,430	3.78	3.78	572	2.16
9	transect 2	8-Jun	corrected	297,000	5,389,243	2,439	2.96	2.96	565	1.67
10	transect 2	10-Jun	corrected	296,953	5,389,195	2,449	4.46	4.52	577	2.61
11	transect 2	10-Jun	corrected	296,901	5,389,145	2,463	4.46	4.52	577	2.61
12	transect 2	10-Jun	corrected	296,851	5,389,095	2,477	4.05	4.11	574	2.36
13	transect 2	10-Jun	corrected	296,799	5,389,051	2,497	5.01	5.07	580	2.94
14	transect 2	10-Jun	corrected	296,747	5,389,005	2,514	3.08	3.14	567	1.78
15	transect 2	10-Jun	corrected	296,694	5,388,959	2,528	4.72	4.78	579	2.77
15.5	transect 2	10-Jun	corrected	296,669	5,388,936	2,535	5.63	5.69	583	3.32
16	transect 2	10-Jun	corrected	296,643	5,388,912	2,543	5.73	5.79	584	3.38
16.5	transect 2	10-Jun	corrected	296,619	5,388,887	2,552	6.56	6.62	588	3.89
17	transect 2	10-Jun	corrected	296,594	5,388,863	2,563	6.84	6.90	589	4.06
1	transect 3	10-Jun	corrected	296,499	5,388,939	2,549	4.41	4.47	577	2.58
1.5	transect 3	10-Jun	corrected	296,524	5,388,963	2,537	6.62	6.68	588	3.93
2	transect 3	10-Jun	corrected	296,545	5,388,988	2,520	5.62	5.68	583	3.31
2.5	transect 3	10-Jun	corrected	296,571	5,389,011	2,509	5.59	5.65	583	3.30
3	transect 3	10-Jun	corrected	296,596	5,389,035	2,503	5.13	5.19	581	3.01
3.5	transect 3	10-Jun	corrected	296,622	5,389,060	2,499	4.38	4.44	577	2.56
4	transect 3	10-Jun	corrected	296,646	5,389,085	2,492	4.35	4.41	576	2.54
5	transect 3	10-Jun	corrected	296,693	5,389,135	2,471	4.02	4.08	574	2.34
6	transect 3	10-Jun	corrected	296,741	5,389,183	2,449	4.56	4.62	578	2.67
7	transect 3	10-Jun	corrected	296,784	5,389,233	2,429	4.60	4.66	578	2.69
8	transect 3	10-Jun	corrected	296,830	5,389,286	2,414	5.00	5.06	580	2.94
9	transect 3	10-Jun	corrected	296,876	5,389,337	2,400	3.38	3.44	570	1.96
10	transect 3	10-Jun	corrected	296,922	5,389,387	2,382	4.40	4.46	577	2.57
11	transect 3	10-Jun	corrected	296,967	5,389,437	2,366	4.41	4.47	577	2.58
12	transect 3	23-Jun	corrected	297,016	5,389,485	2,356	3.58	4.03	574	2.31
12.5	transect 3	10-Jun	corrected	297,015	5,389,485	2,357	3.98	4.04	574	2.32
13	transect 3	23-Jun	corrected	297,070	5,389,519	2,355	2.62	3.07	566	1.74
14	transect 3	23-Jun	corrected	297,122	5,389,552	2,353	3.02	3.47	570	1.98
15	transect 3	23-Jun	corrected	297,173	5,389,592	2,356	3.91	4.36	576	2.51
16	transect 3	23-Jun	corrected	297,222	5,389,626	2,357	3.56	4.01	574	2.30
17	transect 3	23-Jun	corrected	297,271	5,389,664	2,364	3.62	4.07	574	2.34
18	transect 3	23-Jun	corrected	297,320	5,389,704	2,366	3.53	3.98	574	2.28
18.5	transect 3	23-Jun	corrected	297,344	5,389,725	2,364	3.80	4.25	575	2.45
1	annual transect	23-Jun	uncorrected	296,723	5,389,256	2,417	3.92	4.37	576	2.52

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2	annual transect	23-Jun	uncorrected	296,716	5,389,208	2,436	5.00	5.45	582	3.17
3	annual transect	23-Jun	uncorrected	296,712	5,389,157	2,450	5.75	6.20	586	3.63
4	annual transect	23-Jun	uncorrected	296,703	5,389,107	2,469	3.27	3.72	572	2.13
5	annual transect	23-Jun	uncorrected	296,697	5,389,057	2,488	2.95	3.40	569	1.94
6	annual transect	23-Jun	uncorrected	296,691	5,389,005	2,504	3.62	4.07	574	2.34
7	annual transect	23-Jun	uncorrected	296,687	5,388,955	2,518	4.95	5.40	582	3.14
8	annual transect	23-Jun	uncorrected	296,683	5,388,901	2,533	6.05	6.50	587	3.82
9	annual transect	23-Jun	uncorrected	296,677	5,388,851	2,567	7.10	7.55	591	4.46
10	annual transect	23-Jun	uncorrected	296,671	5,388,802	2,570	7.40	7.85	592	4.65
11	annual transect	23-Jun	uncorrected	296,662	5,388,778	2,582	9.03	9.48	597	5.66
13	annual transect	23-Jun	uncorrected	296,739	5,389,355	2,380	5.12	5.57	583	3.25
14	annual transect	23-Jun	uncorrected	296,745	5,389,406	2,365	4.15	4.60	578	2.66
15	annual transect	23-Jun	uncorrected	296,753	5,389,459	2,350	3.78	4.23	575	2.43
16	annual transect	23-Jun	uncorrected	296,760	5,389,512	2,336	3.80	4.25	575	2.45
17	annual transect	23-Jun	uncorrected	296,767	5,389,566	2,326	4.35	4.80	579	2.78
18	annual transect	23-Jun	uncorrected	296,776	5,389,619	2,314	3.87	4.32	576	2.49
19	annual transect	23-Jun	uncorrected	296,783	5,389,671	2,298	2.25	2.70	563	1.52
1	transect 5	23-Jun	uncorrected	296,648	5,388,850	2,553	6.90	7.35	590	4.34
3	transect 5	23-Jun	uncorrected	296,594	5,388,852	2,554	8.80	9.25	597	5.52
lower	density pit	10-Jun	uncorrected	296,746	5,389,409	2,362	4.64	4.70	578	2.72
bare ice	bare ice	8-Jun	corrected	296,530	5,389,176	2,459	0.00	0.00	0	0.00

Count:	110	na	110	110	110
Mean:	2424	na	4.73	572	2.74
Median:	2429	na	4.48	577	2.58
StdDev:	75	na	1.39	56	0.84
Min:	2298	na	0.00	0	0.00
Max:	2582	na	9.48	597	5.66
Range:	285	na	9.48	597	5.66

Table S3: 2007 snow depths
Coordinates: *NAD83 UTM Zone 12N*

2007										
Point ID	**Measurement Group**	**Date Measured**	**GPS**	**Easting**	**Northing**	**Elev (m)**	**Measured Depth (m)**	**Depth on May 26 (m)**	**Density (kg m^{-3})**	**b_w**
E	stake site	22-Jun	corrected	296,420	5,389,180	2,445	2.25	3.33	467	1.56
r	stake site	23-Jun	corrected	296,518	5,389,019	2,509	3.80	4.92	467	2.30
D	stake site	23-Jun	corrected	296,656	5,388,895	2,547	5.31	6.43	467	3.00
q	stake site	23-Jun	corrected	296,854	5,388,990	2,521	3.70	4.82	467	2.25
s	stake site	23-Jun	corrected	297,307	5,389,468	2,407	4.83	5.95	467	2.78
t	stake site	24-Jun	corrected	297,234	5,389,813	2,317	3.50	4.66	467	2.18
F	stake site	24-Jun	corrected	297,158	5,389,554	2,354	4.20	5.36	467	2.50
C	stake site	24-Jun	corrected	296,753	5,389,173	2,450	3.50	4.66	467	2.18
1	transect met	24-Jun	corrected	297,158	5,389,554	2,354	4.15	5.37	467	2.51
2	transect met	24-Jun	corrected	297,116	5,389,529	2,355	4.00	5.22	467	2.44
3	transect met	24-Jun	corrected	297,098	5,389,516	2,357	3.85	5.07	467	2.37
4	transect met	24-Jun	corrected	297,058	5,389,470	2,362	3.45	4.67	467	2.18
5	transect met	24-Jun	corrected	297,016	5,389,424	2,369	3.36	4.58	467	2.14
6	transect met	24-Jun	corrected	296,975	5,389,378	2,382	3.63	4.85	467	2.26
7	transect met	24-Jun	corrected	296,933	5,389,333	2,399	4.35	5.57	467	2.60
8	transect met	24-Jun	corrected	296,891	5,389,288	2,414	2.84	4.06	467	1.90
1	annual transect	26-May	corrected	296,712	5,389,157	2,459	4.85	4.85	467	2.26
2	annual transect	26-May	corrected	296,703	5,389,108	2,479	3.25	3.25	467	1.52
3	annual transect	26-May	corrected	296,696	5,389,058	2,497	2.70	2.70	467	1.26
4	annual transect	26-May	corrected	296,691	5,389,005	2,513	2.75	2.75	467	1.28
5	annual transect	26-May	corrected	296,688	5,388,956	2,527	4.35	4.35	467	2.03
6	annual transect	26-May	corrected	296,683	5,388,901	2,544	5.35	5.35	467	2.50
7	annual transect	26-May	corrected	296,678	5,388,850	2,565	5.55	5.55	467	2.59
8	annual transect	26-May	corrected	296,718	5,388,807	2,585	7.50	7.50	467	3.50
9	annual transect	26-May	corrected	296,807	5,388,759	2,606	8.15	8.15	467	3.81
10	annual transect	26-May	corrected	296,805	5,388,736	2,615	5.70	5.70	467	2.66
12	annual transect	26-May	corrected	296,776	5,389,622	2,324	3.41	3.41	467	1.59
13	annual transect	26-May	corrected	296,767	5,389,567	2,339	5.44	5.44	467	2.54
14	annual transect	26-May	corrected	296,760	5,389,511	2,349	5.60	5.60	467	2.62
15	annual transect	26-May	corrected	296,754	5,389,460	2,364	5.95	5.95	467	2.78
16(a)	annual transect	26-May	corrected	296,746	5,389,421	2,374	3.85	3.85	467	1.80
16(b)	annual transect	26-May	corrected	296,741	5,389,424	2,374	5.00	5.00	467	2.34
17	annual transect	26-May	corrected	296,746	5,389,407	2,379	5.80	5.80	467	2.71
18	annual transect	26-May	corrected	296,739	5,389,358	2,394	5.80	5.80	467	2.71
20	annual transect	26-May	corrected	296,733	5,389,306	2,411	5.50	5.50	467	2.57
21	annual transect	26-May	corrected	296,724	5,389,256	2,427	6.55	6.55	467	3.06
22	annual transect	26-May	corrected	296,718	5,389,209	2,443	5.50	5.50	467	2.57

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lower	density pit	16-May	uncorrected	296,767	5,389,433	2,358	5.29	4.87	467	2.27
1	additional point	15-May	corrected	297,256	5,389,886	2,308	5.37	4.91	467	2.29
bare ice	bare ice	26-May	corrected	296,530	5,389,176	2,459	0.00	0.00	0	0.00
					Count:	40	na	40	40	40
					Mean:	2431	na	4.95	455	2.31
					Median:	2409	na	5.04	467	2.35
					StdDev:	85	na	1.37	74	0.64
					Min:	2308	na	0.00	0	0.00
					Max:	2615	na	8.15	467	3.81
					Range:	307	na	8.15	467	3.81

Table S4: 2008 snow depths
Coordinates: *NAD83 UTM Zone 12N*

2008

Point ID	Measurement Group	Date Measured	GPS	Easting	Northing	Elev (m)	Measured Depth (m)	Depth on June 16 (m)	Density (kg m^{-3})	b_w
A	stake site	9-Jul	uncorrected	296,746	5,389,407	2,365	4.00	5.85	463	2.71
B	stake site	9-Jul	uncorrected	296,993	5,389,588	2,326	4.60	6.45	463	2.99
C	stake site	10-Jul	uncorrected	296,712	5,389,167	2,454	5.10	6.75	463	3.13
D	stake site	10-Jul	uncorrected	296,682	5,388,898	2,542	6.75	8.15	463	3.77
E	stake site	10-Jul	uncorrected	296,441	5,389,174	2,449	2.85	4.55	463	2.11
F	stake site	10-Jul	uncorrected	297,158	5,389,555	2,353	5.30	6.95	463	3.22
G	stake site	10-Jul	uncorrected	297,004	5,389,140	2,475	5.00	6.45	463	2.99
4	annual transect	16-Jun	uncorrected	296,784	5,389,672	2,300	4.60	4.60	463	2.13
5	annual transect	16-Jun	uncorrected	296,775	5,389,618	2,322	4.92	4.92	463	2.28
8	annual transect	16-Jun	uncorrected	296,753	5,389,489	2,354	5.86	5.86	463	2.71
lower	density pit	16-Jun	corrected	296,742	5,389,419	2,375	6.50	6.50	463	3.01
bare ice	bare ice	16-Jun	corrected	296,530	5,389,176	2,459	0.00	0.00	0	0.00
					Count:	12	na	12	12	12
					Mean:	2398	na	5.59	424	2.59
					Median:	2370	na	6.16	463	2.85
					StdDev:	75	na	2.04	134	0.95
					Min:	2300	na	0.00	0	0.00
					Max:	2542	na	8.15	463	3.77
					Range:	242	na	8.15	463	3.77

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Table S5: 2009 snow depths

Coordinates: *NAD83 UTM Zone 12N*

2009

Point ID	Measurement Group	Date Measured	GPS	Easting	Northing	Elev (m)	Measured Depth (m)	Depth on June 16 (m)	Density (kg m^{-3})	b_w
A	stake site	25-Jun	corrected	296,749	5,389,407	2,376	3.30	3.55	570	2.03
B	stake site	25-Jun	corrected	296,994	5,389,586	2,326	3.50	3.75	572	2.14
D	stake site	25-Jun	corrected	296,682	5,388,899	2,543	6.35	6.60	588	3.88
E	stake site	25-Jun	corrected	296,453	5,389,183	2,449	1.95	2.20	557	1.23
F	stake site	25-Jun	corrected	297,158	5,389,555	2,352	3.75	4.00	574	2.29
G	stake site	25-Jun	corrected	297,004	5,389,142	2,475	3.50	3.75	572	2.14
1	additional point	25-Jun	corrected	296,798	5,389,473	2,360	3.10	3.35	569	1.91
2	additional point	25-Jun	corrected	296,744	5,389,436	2,367	3.48	3.73	572	2.13
3	additional point	25-Jun	corrected	296,742	5,389,181	2,450	3.43	3.68	571	2.10
4	additional point	25-Jun	corrected	296,693	5,389,134	2,471	2.82	3.07	566	1.74
5	additional point	25-Jun	corrected	296,692	5,389,396	2,382	4.27	4.52	577	2.61
1	transect A	25-Jun	corrected	296,401	5,389,164	2,453	3.16	3.16	567	1.79
2	transect A	16-Jun	corrected	296,425	5,389,187	2,444	2.57	2.57	562	1.44
3	transect A	16-Jun	corrected	296,450	5,389,205	2,440	2.19	2.19	557	1.22
4	transect A	16-Jun	corrected	296,476	5,389,230	2,437	0.15	0.15	483	0.07
5	transect A	16-Jun	corrected	296,591	5,389,272	2,428	3.66	3.66	571	2.09
6	transect A	16-Jun	corrected	296,628	5,389,359	2,397	4.67	4.67	578	2.70
7	transect A	16-Jun	corrected	296,694	5,389,397	2,381	4.57	4.57	577	2.64
8	transect A	16-Jun	corrected	296,745	5,389,436	2,368	3.82	3.82	572	2.19
9	transect A	16-Jun	corrected	296,799	5,389,473	2,358	3.37	3.37	569	1.92
10	transect A	16-Jun	uncorrected	296,851	5,389,524	2,343	3.77	3.77	572	2.16
10.5	transect A	16-Jun	uncorrected	296,851	5,389,524	2,343	3.77	3.85	573	2.20
11	transect A	16-Jun	corrected	296,902	5,389,568	2,330	3.47	3.47	570	1.98
12	transect A	16-Jun	uncorrected	296,954	5,389,610	2,318	3.71	3.71	572	2.12
12.5	transect A	16-Jun	uncorrected	296,954	5,389,610	2,318	3.71	3.71	572	2.12
13	transect A	17-Jun	corrected	297,005	5,389,651	2,309	5.77	5.77	584	3.37
14	transect A	16-Jun	corrected	297,067	5,389,705	2,306	3.21	3.21	568	1.82
16	transect A	16-Jun	corrected	297,158	5,389,792	2,306	3.40	3.40	569	1.94
17	transect A	16-Jun	corrected	297,208	5,389,840	2,302	3.37	3.37	569	1.92
18	transect A	16-Jun	corrected	297,254	5,389,891	2,305	3.35	3.35	569	1.91
19	transect A	16-Jun	corrected	297,282	5,389,940	2,306	6.17	6.17	586	3.61
1	transect B	16-Jun	corrected	297,343	5,389,725	2,364	5.23	5.23	581	3.04
2	transect B	16-Jun	corrected	297,317	5,389,706	2,365	4.77	4.77	579	2.76
3	transect B	16-Jun	corrected	297,270	5,389,668	2,362	4.85	4.85	579	2.81
4	transect B	16-Jun	corrected	297,223	5,389,631	2,355	3.53	3.53	570	2.01
5	transect B	16-Jun	uncorrected	297,166	5,389,591	2,397	3.71	3.71	572	2.12
7	transect B	17-Jun	uncorrected	297,068	5,389,519	2,356	3.51	3.51	570	2.00
9	transect B	17-Jun	uncorrected	296,966	5,389,445	2,398	3.80	3.80	572	2.17
11	transect B	17-Jun	corrected	296,873	5,389,336	2,397	3.78	3.78	572	2.16
13	transect B	17-Jun	corrected	296,795	5,389,224	2,431	3.92	3.92	573	2.25
14	transect B	17-Jun	corrected	296,745	5,389,181	2,448	4.02	4.02	574	2.31
16	transect B	17-Jun	corrected	296,712	5,389,141	2,463	4.82	4.82	579	2.79

17	transect B	17-Jun	uncorrected	296,698	5,389,124	2,469	3.03	3.03	566	1.72
18	transect B	17-Jun	corrected	296,632	5,389,053	2,499	3.12	3.12	567	1.77
19	transect B	17-Jun	corrected	296,600	5,389,030	2,502	3.48	3.48	570	1.98
20	transect B	17-Jun	corrected	296,574	5,389,009	2,507	4.55	4.55	577	2.63
21	transect B	17-Jun	corrected	296,544	5,388,986	2,519	3.93	3.93	573	2.25
22	transect B	17-Jun	corrected	296,517	5,388,964	2,533	4.75	4.75	578	2.75
1	transect C	17-Jun	uncorrected	297,382	5,389,645	2,380	4.25	4.25	575	2.45
3	transect C	17-Jun	uncorrected	297,334	5,389,602	2,383	2.28	2.28	558	1.27
5	transect C	17-Jun	uncorrected	297,287	5,389,548	2,387	2.18	2.18	557	1.21
7	transect C	17-Jun	uncorrected	297,200	5,389,445	2,392	3.89	3.89	573	2.23
9	transect C	17-Jun	uncorrected	297,095	5,389,352	2,411	3.40	3.40	569	1.94
10	transect C	17-Jun	uncorrected	297,048	5,389,300	2,422	4.27	4.27	576	2.46
12	transect C	17-Jun	uncorrected	296,945	5,389,209	2,444	3.76	3.76	572	2.15
13	transect C	17-Jun	uncorrected	296,740	5,389,014	2,516	4.10	4.10	574	2.36
1	transect D	17-Jun	uncorrected	296,592	5,389,355	2,409	6.02	6.02	585	3.52
2	transect D	17-Jun	uncorrected	296,705	5,389,307	2,420	4.63	4.63	578	2.68
3	transect D	17-Jun	uncorrected	296,862	5,389,272	2,424	2.82	2.82	564	1.59
4	transect D	17-Jun	uncorrected	296,914	5,389,250	2,432	5.73	5.73	584	3.34
5	transect D	17-Jun	uncorrected	297,023	5,389,220	2,454	3.03	3.03	566	1.72
6	transect D	17-Jun	uncorrected	297,131	5,389,198	2,476	6.73	6.73	588	3.96
7	transect D	17-Jun	uncorrected	297,184	5,389,181	2,498	8.50	8.50	594	5.05
1	annual transect	25-Jun	corrected	296,783	5,389,673	2,299	3.72	3.97	574	2.28
2	annual transect	25-Jun	corrected	296,775	5,389,618	2,323	2.15	2.40	560	1.34
3	annual transect	25-Jun	corrected	296,766	5,389,564	2,338	3.32	3.57	571	2.04
4	annual transect	25-Jun	corrected	296,760	5,389,510	2,346	3.83	4.08	574	2.34
5	annual transect	25-Jun	corrected	296,753	5,389,456	2,363	3.20	3.45	570	1.97
6	annual transect	25-Jun	corrected	296,745	5,389,405	2,378	3.42	3.67	571	2.10
7	annual transect	25-Jun	corrected	296,739	5,389,354	2,394	3.98	4.23	575	2.43
8	annual transect	25-Jun	corrected	296,733	5,389,306	2,411	3.42	3.67	571	2.10
9	annual transect	25-Jun	corrected	296,723	5,389,255	2,427	4.80	5.05	580	2.93
10	annual transect	25-Jun	corrected	296,716	5,389,208	2,443	3.57	3.82	572	2.19
11	annual transect	25-Jun	corrected	296,703	5,389,107	2,479	2.45	2.70	563	1.52
12	annual transect	25-Jun	corrected	296,697	5,389,056	2,498	3.23	3.48	570	1.98
13	annual transect	25-Jun	corrected	296,692	5,389,005	2,511	2.05	2.30	559	1.28
14	annual transect	25-Jun	corrected	296,688	5,388,954	2,527	3.40	3.65	571	2.08
16	annual transect	25-Jun	corrected	296,678	5,388,854	2,565	5.40	5.65	583	3.30
17	annual transect	25-Jun	corrected	296,673	5,388,806	2,584	8.00	8.25	594	4.90
bare ice	bare ice	25-Jun	corrected	296,530	5,389,176	2,459	0.00	0.00	0	0.00

Count:	80	na	80	80	80
Mean:	2411	na	3.91	564	2.25
Median:	2404	na	3.74	572	2.14
StdDev:	70	na	1.34	65	0.80
Min:	2299	na	0.00	0	0.00
Max:	2584	na	8.50	594	5.05
Range:	285	na	8.50	594	5.05

Table S6: 2010 snow depths

Coordinates: *NAD83 UTM Zone 12N*

2010									
Point ID	**Measurement Group**	**Date Measured**	**GPS**	**Easting**	**Northing**	**Elev (m)**	**Measured Depth (m)**	**Density (kg m^{-3})**	**b_w**
A	stake site	23-Jun	corrected	296,743	5,389,407	2,380	4.10	574	2.36
B	stake site	23-Jun	corrected	296,990	5,389,585	2,324	4.00	574	2.29
C	stake site	23-Jun	corrected	296,712	5,389,162	2,464	5.45	582	3.17
D	stake site	23-Jun	corrected	296,686	5,388,896	2,549	6.40	587	3.75
E	stake site	23-Jun	corrected	296,443	5,389,176	2,461	4.85	579	2.81
F	stake site	23-Jun	corrected	297,158	5,389,562	2,352	4.60	578	2.66
G	stake site	23-Jun	corrected	297,003	5,389,133	2,486	4.70	578	2.72
1	annual transect	23-Jun	corrected	296,690	5,388,950	2,529	5.80	584	3.39
2	annual transect	23-Jun	corrected	296,683	5,388,900	2,547	6.50	587	3.82
3	annual transect	23-Jun	corrected	296,677	5,388,878	2,555	6.50	587	3.82
4	annual transect	23-Jun	corrected	296,676	5,388,854	2,564	6.75	588	3.97
5	annual transect	23-Jun	corrected	296,691	5,389,004	2,515	3.40	569	1.94
6	annual transect	23-Jun	corrected	296,697	5,389,056	2,500	3.45	570	1.97
7	annual transect	23-Jun	corrected	296,702	5,389,107	2,481	3.85	573	2.20
9	annual transect	23-Jun	corrected	296,717	5,389,208	2,443	4.75	578	2.75
10	annual transect	23-Jun	corrected	296,723	5,389,257	2,427	5.40	582	3.14
11	annual transect	23-Jun	corrected	296,733	5,389,307	2,410	3.90	573	2.23
12	annual transect	23-Jun	corrected	296,739	5,389,355	2,396	4.50	577	2.60
13	annual transect	23-Jun	corrected	296,745	5,389,405	2,379	4.25	575	2.45
14	annual transect	23-Jun	corrected	296,753	5,389,459	2,364	4.05	574	2.33
15	annual transect	23-Jun	corrected	296,759	5,389,511	2,349	5.10	580	2.96
16	annual transect	23-Jun	corrected	296,767	5,389,565	2,338	3.90	573	2.23
17	annual transect	23-Jun	corrected	296,776	5,389,619	2,322	3.60	571	2.06
18	annual transect	23-Jun	corrected	296,783	5,389,670	2,304	4.35	576	2.51
19	annual transect	23-Jun	corrected	296,667	5,388,937	2,535	6.00	585	3.51
20	annual transect	23-Jun	corrected	296,741	5,389,183	2,445	4.80	579	2.78
21	annual transect	23-Jun	corrected	296,687	5,388,955	2,523	5.45	582	3.17
22	annual transect	23-Jun	corrected	296,669	5,388,936	2,527	6.20	586	3.63
1	transect 2	23-Jun	corrected	296,599	5,389,345	2,408	4.47	577	2.58
2	transect 2	23-Jun	corrected	296,653	5,389,331	2,410	5.60	583	3.26
3	transect 2	23-Jun	corrected	296,705	5,389,316	2,413	4.15	575	2.39
4	transect 2	23-Jun	corrected	296,831	5,389,287	2,418	4.03	574	2.31
5	transect 2	23-Jun	corrected	296,918	5,389,253	2,429	5.57	583	3.25
7	transect 2	23-Jun	corrected	297,134	5,389,195	2,479	4.40	576	2.54
8	transect 2	23-Jun	corrected	297,185	5,389,183	2,501	6.27	586	3.67
1	transect 2a	23-Jun	corrected	297,279	5,389,939	2,299	6.25	586	3.66
2	transect 2a	23-Jun	corrected	297,255	5,389,889	2,294	4.25	575	2.45
3	transect 2a	23-Jun	corrected	297,207	5,389,839	2,301	4.60	578	2.66
4	transect 2a	23-Jun	corrected	297,157	5,389,789	2,305	4.90	579	2.84
5	transect 2a	23-Jun	corrected	297,106	5,389,739	2,304	3.70	572	2.11

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6	transect 2a	23-Jun	corrected	297,058	5,389,696	2,306	3.60	571	2.06
7	transect 2a	23-Jun	corrected	296,954	5,389,610	2,315	4.30	576	2.48
8	transect 2a	23-Jun	corrected	296,848	5,389,525	2,340	4.60	578	2.66
9	transect 2a	23-Jun	corrected	296,745	5,389,437	2,362	3.10	567	1.76
10	transect 2a	23-Jun	corrected	296,692	5,389,397	2,373	3.30	568	1.88
11	transect 2a	23-Jun	corrected	296,475	5,389,231	2,427	1.67	550	0.92
12	transect 2a	23-Jun	corrected	296,450	5,389,208	2,434	4.40	576	2.54
13	transect 2a	23-Jun	corrected	296,423	5,389,186	2,439	4.85	579	2.81
14	transect 2a	23-Jun	corrected	296,395	5,389,167	2,446	5.15	581	2.99
1	transect 3	23-Jun	corrected	297,379	5,389,640	2,377	5.62	583	3.28
2	transect 3	23-Jun	corrected	297,360	5,389,619	2,374	5.55	583	3.23
4	transect 3	23-Jun	corrected	297,312	5,389,591	2,382	5.35	582	3.11
5	transect 3	23-Jun	corrected	297,288	5,389,547	2,388	4.60	578	2.66
6	transect 3	23-Jun	corrected	297,193	5,389,445	2,387	4.08	574	2.34
7	transect 3	23-Jun	corrected	297,098	5,389,343	2,409	4.43	577	2.55
8	transect 3	23-Jun	corrected	297,001	5,389,243	2,434	3.53	570	2.01
9	transect 3	23-Jun	corrected	296,901	5,389,144	2,460	4.37	576	2.52
10	transect 3	23-Jun	corrected	296,800	5,389,051	2,492	5.30	581	3.08
13	transect 3	23-Jun	corrected	296,644	5,388,913	2,536	5.33	582	3.10
14	transect 3	23-Jun	corrected	296,594	5,388,938	N/O	7.00	589	4.12
2	transect 3a	23-Jun	corrected	296,966	5,389,436	2,362	4.60	578	2.66
3	transect 3a	23-Jun	corrected	297,174	5,389,592	2,348	4.40	576	2.54
1	transect 4	23-Jun	corrected	296,524	5,388,962	2,529	7.00	589	4.12
2	transect 4	23-Jun	corrected	296,571	5,389,011	2,504	5.42	582	3.15
3	transect 4	23-Jun	corrected	296,597	5,389,035	2,494	4.92	579	2.85
4	transect 4	23-Jun	corrected	296,646	5,389,085	2,491	2.80	564	1.58
6	transect 4	23-Jun	corrected	296,876	5,389,338	2,398	4.52	577	2.61
8	transect 4	23-Jun	corrected	297,069	5,389,519	2,353	4.13	575	2.37
10	transect 4	23-Jun	corrected	297,271	5,389,664	2,371	4.63	578	2.68
12	transect 4	23-Jun	corrected	297,344	5,389,725	2,375	5.27	581	3.06
bare ice	bare ice	23-Jun	corrected	296,530	5,389,176	2,459	0.00	0	0.00

Count:	70	71	71	71
Mean:	2420	4.68	570	2.71
Median:	2412	4.60	578	2.66
StdDev:	76	1.16	69	0.70
Min:	2294	0.00	0	0.00
Max:	2564	7.00	589	4.12
Range:	271	7.00	589	4.12

Table S7: 2011 snow depths

Coordinates: *NAD83 UTM Zone 12N*

2011

Point ID	Measurement Group	Date Measured	GPS	Easting	Northing	Elev (m)	Measured Depth (m)	Density (kg m^{-3})	b_w
A	stake site	24-Jun	corrected	296,741	5,389,397	2,380	6.60	588	3.88
B	stake site	24-Jun	corrected	296,992	5,389,597	2,324	6.56	587	3.86
C	stake site	24-Jun	corrected	296,714	5,389,170	2,464	7.65	592	4.53
D	stake site	24-Jun	corrected	296,687	5,388,900	2,549	8.55	595	5.08
E	stake site	24-Jun	corrected	296,440	5,389,172	2,461	5.97	585	3.49
F	stake site	24-Jun	corrected	297,155	5,389,566	2,352	6.07	585	3.55
G	stake site	24-Jun	corrected	296,997	5,389,120	2,486	7.13	590	4.21
1	annual transect	24-Jun	corrected	296,644	5,388,761	2,620	8.50	594	5.05
2	annual transect	24-Jun	corrected	296,660	5,388,779	2,605	8.50	594	5.05
3	annual transect	24-Jun	corrected	296,670	5,388,801	2,592	7.32	590	4.32
4	annual transect	24-Jun	corrected	296,675	5,388,853	2,571	7.87	592	4.66
5	annual transect	24-Jun	corrected	296,681	5,388,903	2,550	7.42	591	4.38
6	annual transect	24-Jun	corrected	296,694	5,388,958	2,531	8.08	593	4.79
7	annual transect	24-Jun	corrected	296,691	5,389,007	2,519	7.13	590	4.20
8	annual transect	24-Jun	corrected	296,696	5,389,057	2,503	6.95	589	4.09
9	annual transect	24-Jun	corrected	296,705	5,389,110	2,483	6.33	586	3.71
10	annual transect	24-Jun	corrected	296,712	5,389,157	2,463	5.88	584	3.44
11	annual transect	24-Jun	corrected	296,725	5,389,262	N/O	8.05	593	4.77
12	annual transect	24-Jun	corrected	296,719	5,389,209	N/O	8.58	595	5.10
13	annual transect	24-Jun	corrected	296,732	5,389,314	2,414	6.03	585	3.53
14	annual transect	24-Jun	corrected	296,741	5,389,361	2,395	6.58	587	3.87
15	annual transect	24-Jun	corrected	296,746	5,389,417	2,382	6.48	587	3.80
16	annual transect	24-Jun	corrected	296,752	5,389,461	2,366	5.90	584	3.45
17	annual transect	24-Jun	corrected	296,759	5,389,513	2,351	6.65	588	3.91
18	annual transect	24-Jun	corrected	296,767	5,389,570	2,336	5.83	584	3.41
19	annual transect	24-Jun	corrected	296,784	5,389,627	2,325	6.18	586	3.62
20	annual transect	24-Jun	corrected	296,780	5,389,675	2,301	7.23	590	4.27
					Count:	25	27	27	27
					Mean:	2453	7.04	589	4.15
					Median:	2463	6.95	589	4.09
					StdDev:	98	0.92	4	0.57
					Min:	2301	5.83	584	3.41
					Max:	2620	8.58	595	5.10
					Range:	319	2.75	11	1.70

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Table S8: 2012 snow depths

Coordinates: *NAD83 UTM Zone 12N*

2012

Point ID	Measurement Group	Date Measured	GPS	Easting	Northing	Elev (m)	Measured Depth (m)	Depth on June 28 (m)	Density (kg m^{-3})	b_w
A	stake site	28-Jun	uncorrected	296,737	5,389,404	2,377	5.15	5.15	581	2.99
B	stake site	12-Jul	uncorrected	296,987	5,389,587	2,323	4.60	5.10	580	2.96
C	stake site	28-Jun	uncorrected	296,709	5,389,173	2,454	6.40	6.40	587	3.75
D	stake site	28-Jun	uncorrected	296,679	5,388,904	2,547	9.00	9.00	596	5.36
E	stake site	28-Jun	uncorrected	296,440	5,389,175	2,450	4.25	4.25	575	2.45
F	stake site	28-Jun	uncorrected	297,156	5,389,559	2,358	6.15	6.15	586	3.60
G	stake site	12-Jul	uncorrected	296,995	5,389,129	2,480	5.40	6.65	588	3.91
6	annual transect	12-Jul	corrected	296,694	5,388,957	2,533	7.85	9.09	596	5.42
9	annual transect	12-Jul	corrected	296,705	5,389,110	2,483	3.00	4.24	575	2.44
10	annual transect	12-Jul	corrected	296,712	5,389,157	2,465	5.45	6.69	588	3.93
11	annual transect	12-Jul	corrected	296,719	5,389,209	2,447	5.05	6.29	586	3.69
12	annual transect	12-Jul	corrected	296,726	5,389,314	2,413	4.00	5.24	581	3.05
13	annual transect	12-Jul	corrected	296,741	5,389,361	2,396	1.95	3.19	568	1.81
14	annual transect	12-Jul	corrected	296,746	5,389,416	2,378	2.00	3.24	568	1.84
15	annual transect	12-Jul	corrected	296,750	5,389,463	2,364	3.65	4.89	579	2.83
16	annual transect	12-Jul	corrected	296,759	5,389,513	2,350	4.25	5.49	582	3.20
17	annual transect	12-Jul	corrected	296,767	5,389,570	2,338	4.10	5.34	582	3.11
18	annual transect	12-Jul	corrected	296,784	5,389,627	2,321	2.85	4.09	574	2.35
19	annual transect	12-Jul	corrected	296,780	5,389,675	2,303	4.00	5.24	581	3.05
					Count:	19	na	19	19	19
					Mean:	2409	na	5.56	582	3.25
					Median:	2396	na	5.24	581	3.05
					StdDev:	73	na	1.60	8	0.98
					Min:	2303	na	3.19	568	1.81
					Max:	2547	na	9.09	596	5.42
					Range:	244	na	5.90	29	3.61

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Table S9: 2013 snow depths

Coordinates: *NAD83 UTM Zone 12N*

2013									
Point ID	**Measurement Group**	**Date Measured**	**GPS**	**Easting**	**Northing**	**Elev (m)**	**Measured Depth (m)**	**Density (kg m^{-3})**	**b_w**
A	stake site	11-Jun	corrected	296,735	5,389,407	2,382	5.05	580	2.93
B	stake site	11-Jun	corrected	296,989	5,389,588	2,328	5.15	581	2.99
C	stake site	11-Jun	corrected	296,711	5,389,178	2,460	5.05	580	2.93
D	stake site	11-Jun	corrected	296,683	5,388,910	2,551	7.25	590	4.28
E	stake site	11-Jun	corrected	296,439	5,389,177	2,458	4.50	577	2.60
F	stake site	11-Jun	corrected	297,152	5,389,562	2,348	5.30	581	3.08
G	stake site	11-Jun	corrected	296,996	5,389,131	2,486	5.05	580	2.93
5	annual transect	11-Jun	corrected	296,681	5,388,914	2,555	7.23	590	4.27
6	annual transect	11-Jun	corrected	296,694	5,388,958	2,536	5.75	584	3.36
7	annual transect	11-Jun	corrected	296,691	5,389,007	2,521	4.30	576	2.48
8	annual transect	11-Jun	corrected	296,696	5,389,057	2,505	3.85	573	2.20
9	annual transect	11-Jun	corrected	296,705	5,389,110	2,485	4.13	575	2.38
10	annual transect	11-Jun	corrected	296,711	5,389,178	2,460	5.03	580	2.92
11	annual transect	11-Jun	corrected	296,718	5,389,209	2,449	5.27	581	3.06
12	annual transect	11-Jun	corrected	296,726	5,389,313	2,413	4.42	576	2.55
13	annual transect	11-Jun	corrected	296,741	5,389,361	2,397	5.07	580	2.94
14	annual transect	11-Jun	corrected	296,752	5,389,461	2,365	4.55	577	2.63
15	annual transect	11-Jun	corrected	296,759	5,389,514	2,350	4.75	578	2.75
16	annual transect	11-Jun	corrected	296,768	5,389,571	2,338	4.43	577	2.56
17	annual transect	11-Jun	corrected	296,784	5,389,627	2,320	4.27	576	2.46
18	annual transect	11-Jun	corrected	296,780	5,389,676	2,303	4.88	579	2.83
					Count:	21	21	21	21
					Mean:	2429	5.01	580	2.91
					Median:	2449	5.03	580	2.92
					StdDev:	81	0.87	4	0.53
					Min:	2303	3.85	573	2.20
					Max:	2555	7.25	590	4.28
					Range:	252	3.40	17	2.07

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Table S10: 2014 snow depths

Coordinates: *NAD83 UTM Zone 12N*

2014									
Point ID	**Measurement Group**	**Date Measured**	**GPS**	**Easting**	**Northing**	**Elev (m)**	**Measured Depth (m)**	**Density (kg m^{-3})**	**b_w**
A	stake site	11-Jun	uncorrected	296,735	5,389,407	2,382	5.45	549	2.99
B	stake site	11-Jun	uncorrected	296,989	5,389,588	2,328	5.62	536	3.01
C	stake site	11-Jun	uncorrected	296,711	5,389,178	2,460	5.19	507	2.63
D	stake site	11-Jun	uncorrected	296,683	5,388,910	2,551	7.95	551	4.38
E	stake site	11-Jun	uncorrected	296,439	5,389,177	2,458	3.80	536	2.04
F	stake site	11-Jun	uncorrected	297,152	5,389,562	2,348	5.27	536	2.82
G	stake site	11-Jun	uncorrected	296,996	5,389,131	2,486	5.28	536	2.83
					Count:	7	7	7	7
					Mean:	2430	5.51	536	2.96
					Median:	2458	5.28	536	2.83
					StdDev:	81	1.23	14	0.71
					Min:	2328	3.80	507	2.04
					Max:	2551	7.95	551	4.38
					Range:	223	4.15	44	2.34

Table S11: 2015 snow depths

Coordinates: *NAD83 UTM Zone 12*

2015										
Point ID	**Measurement Group**	**Date Measured**	**GPS**	**Easting**	**Northing**	**Elev (m)**	**Measured Depth (m)**	**Depth on May 25 (m)**	**Density (kg m^{-3})**	**b_w**
A	stake site	25-May	uncorrected	296,741	5,389,395	2,387	5.00	5.00	491	2.46
B	stake site	25-May	uncorrected	296,996	5,389,582	2,338	4.62	4.62	506	2.34
C	stake site	25-May	uncorrected	296,713	5,389,175	2,460	5.60	5.60	521	2.92
D	stake site	25-May	uncorrected	296,689	5,388,900	2,552	6.43	6.43	506	3.25
E	stake site	25-May	uncorrected	296,443	5,389,175	2,454	3.93	3.93	506	1.99
F	stake site	25-May	uncorrected	297,156	5,389,565	2,363	4.68	4.68	506	2.37
G	stake site	25-May	uncorrected	296,994	5,389,123	2,488	5.08	5.08	506	2.57
Z	stake site	15-Jun	uncorrected	296,825	5,388,829	2,567	6.67	8.34	506	4.22
					Count:	8	8	8	8	8
					Mean:	2451	5.25	5.46	506	2.76
					Median:	2457	5.04	5.04	506	2.51
					StdDev:	84	0.93	1.38	8	0.70
					Min:	2338	3.93	3.93	491	1.99
					Max:	2567	6.67	8.34	521	4.22
					Range:	229	2.74	4.41	30	2.23

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Table S12: 2005 ablation stake sites

Coordinates: *NAD83 UTM Zone 12N*

2005											
ID	**Old ID #**	**Easting**	**Northing**	**Elev (m)**	**Install Date**	**Final Visit Date**	**Measured Snow Depth on Install Date (m)**	**Snow Depth on June 24 (m)**	**Snow Density (kg m^{-3})**	**GPS**	
A	1	296,747	5,389,408	2,362	25-Jun	9-Sep	3.59	3.59	571	uncorrected	
C	2	296,712	5,389,168	2,447	25-Jun	9-Sep	4.20	4.20	575	uncorrected	
D	3	296,682	5,388,899	2,525	26-Jun	9-Sep	4.55	4.55	577	uncorrected	
h	4	296,853	5,389,132	2,453	13-Jul	9-Sep	2.45	N/A	N/A	uncorrected	
G	5	297,004	5,389,140	2,467	14-Jul	9-Sep	2.35	N/A	N/A	uncorrected	
ID	**Old ID #**	**Δ Snow Height (m)**	**Δ Firn Height (m)**	**Δ Ice Height (m)**	**Total Meas. Δ Height (m)**	**Δ Mass – Snow (m w.e.)**	**Δ Mass – Firn (m w.e.)**	**Δ Mass – Ice (m w.e.)**	***b_s* (m w.e.)**	**b_w (m w.e.)**	***b_a (m w.e.)***
A	1	-3.59	0.00	-1.66	-5.25	-2.05	0.00	-1.45	-3.50	2.05	-1.45
C	2	-4.20	0.00	-1.01	-5.21	-2.42	0.00	-0.88	-3.30	2.42	-0.88
D	3	-4.55	-0.51	0.00	-5.06	-2.63	-0.37	0.00	-2.99	2.63	-0.37
h	4	-2.45	0.00	-1.00	-3.45	N/O	0.00	-0.87	N/O	N/O	-0.87
G	5	-2.35	0.00	-1.01	-3.36	N/O	0.00	-0.88	N/O	N/O	-0.88
	Count:	3	3	5	3	3	3	5	3	3	5
	Mean:	-4.11	-0.17	-0.94	-5.17	-2.36	-0.12	-0.82	-3.26	2.36	-0.89
	Median:	-4.20	0.00	-1.01	-5.21	-2.42	0.00	-0.88	-3.30	2.42	-0.88
	StdDev:	0.49	0.29	0.59	0.10	0.29	0.21	0.52	0.25	0.29	0.38
	Min:	-4.55	-0.51	-1.66	-5.25	-2.63	-0.37	-1.45	-3.50	2.05	-1.45
	Max:	-3.59	0.00	0.00	-5.06	-2.05	0.00	0.00	-2.99	2.63	-0.37
	Range:	0.96	0.51	1.66	0.19	0.58	0.37	1.45	0.51	0.58	1.08

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Table S13: 2006 ablation stake sites

Coordinates: *NAD83 UTM Zone 12N*

2006											
ID	**Old ID #**	**Easting**	**Northing**	**Elev (m)**	**Install Date**	**Final Visit Date**	**Measured Snow Depth on Install Date (m)**	**‡Snow Depth on June 8th (m)**	**Snow Density (kg m^{-3})**	**GPS**	
A	1	296,747	5,389,410	2,360	28-Jun	28-Sep	4.07	4.64	578	corrected	
C	2	296,712	5,389,168	2,447	27-Jun	28-Sep	4.43	4.97	580	uncorrected	
D	3	296,682	5,388,899	2,525	29-Jun	N/O	5.55	6.15	586	uncorrected	
h	4	296,853	5,389,132	2,453	27-Jun	28-Sep	4.83	5.43	582	uncorrected	
G	5	297,004	5,389,140	2,467	27-Jun	28-Sep	3.88	4.48	577	uncorrected	
i	6	297,262	5,389,277	2,465	27-Jun	N/O	7.00	7.54	591	corrected	
j	7	297,271	5,389,447	2,407	27-Jun	N/O	4.10	4.64	578	corrected	
k	8	297,098	5,389,343	2,409	28-Jun	N/O	3.45	4.99	580	corrected	
l	9	297,024	5,389,454	2,364	28-Jun	28-Sep	3.50	4.07	574	corrected	
m	10	297,235	5,389,643	2,359	27-Jun	28-Sep	3.45	3.99	574	corrected	
n	11	297,255	5,389,891	2,309	27-Jun	N/O	3.80	4.33	576	corrected	
o	12	297,004	5,389,650	2,311	27-Jun	N/O	3.38	3.92	573	corrected	
E	13	296,425	5,389,185	2,447	28-Jun	28-Sep	2.82	3.39	569	corrected	
p	14	296,525	5,388,968	2,530	29-Jun	N/O	6.85	7.45	591	corrected	
q	15	296,845	5,388,960	2,533	29-Jun	28-Sep	4.15	4.75	578	corrected	

ID	**Old ID #**	**Δ Snow Height (m)**	**Δ Firn Height (m)**	**Δ Ice Height (m)**	**Total Meas. Δ Height (m)**	**Δ Mass – Snow (m w.e.)**	**Δ Mass – Firn (m w.e.)**	**Δ Mass – Ice (m w.e.)**	***b*$_s$ (m w.e.)**	**b$_w$ (m w.e.)**	***b*$_a$ *(m w.e.)***
A	1	-4.64	0.00	-1.48	-6.12	-2.68	0.00	-1.29	-3.97	2.68	-1.29
C	2	-4.97	0.00	-1.12	-6.09	-2.88	0.00	-0.98	-3.86	2.88	-0.98
D	3	N/O	N/O	N/O	N/O	N/O	N/O	N/O	N/O	3.60	N/O
h	4	-5.43	0.00	-0.86	-6.29	-3.16	0.00	-0.75	-3.91	3.16	-0.75

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G	5	-4.48	0.00	-0.73	-5.21	-2.58	0.00	-0.64	-3.22	2.58	-0.64
i	6	N/O	N/O	N/O	N/O	N/O	N/O	N/O	N/O	4.46	N/O
j	7	N/O	N/O	N/O	N/O	N/O	N/O	N/O	N/O	2.68	N/O
k	8	N/O	N/O	N/O	N/O	N/O	N/O	N/O	N/O	2.89	N/O
l	9	-4.07	0.00	-1.85	-5.92	-2.34	0.00	-1.62	-3.95	2.34	-1.62
m	10	-3.99	0.00	-2.16	-6.15	-2.29	0.00	-1.89	-4.18	2.29	-1.89
n	11	N/O	N/O	N/O	N/O	N/O	N/O	N/O	N/O	2.49	N/O
o	12	N/O	N/O	N/O	N/O	N/O	N/O	N/O	N/O	2.25	N/O
E	13	-3.39	0.00	-1.88	-5.27	-1.93	0.00	-1.64	-3.57	1.93	-1.64
p	14	N/O	N/O	N/O	N/O	N/O	N/O	N/O	N/O	4.40	N/O
q	15	-4.75	0.00	-0.30	-5.05	-2.75	0.00	-0.26	-3.01	2.75	-0.26
	Count:	8	8	8	8	8	8	8	8	15	8
	Mean:	-4.47	0.00	-1.30	-5.76	-2.58	0.00	-1.13	-3.71	2.89	-1.13
	Median:	-4.56	0.00	-1.30	-6.01	-2.63	0.00	-1.14	-3.89	2.68	-1.14
	StdDev:	0.64	0.00	0.65	0.50	0.38	0.00	0.57	0.41	0.74	0.57
	Min:	-5.43	0.00	-2.16	-6.29	-3.16	0.00	-1.89	-4.18	1.93	-1.89
	Max:	-3.39	0.00	-0.30	-5.05	-1.93	0.00	-0.26	-3.01	4.46	-0.26
	Range:	2.04	0.00	1.86	1.24	1.23	0.00	1.63	1.17	2.53	1.63

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Table S14: 2007 ablation stake sites

Coordinates: *NAD83 UTM Zone 12N*

2007											
ID	**Old ID #**	**Easting**	**Northing**	**Elev (m)**	**Install Date**	**Final Visit Date**	**Measured Snow Depth on Install Date (m)**	**‡Depth on May 26 (m)**	**Snow Density (kg m^{-3})**	**GPS**	
*E	*1	296,420	5,389,180	2,445	22-Jun	N/O	2.25	3.33	467	corrected	
r	2	296,518	5,389,019	2,509	23-Jun	8-Sep	3.80	4.92	467	corrected	
D	3	296,656	5,388,895	2,547	23-Jun	8-Sep	5.31	6.43	467	corrected	
q	4	296,854	5,388,990	2,521	23-Jun	8-Sep	3.70	4.82	467	corrected	
s	5	297,307	5,389,468	2,407	23-Jun	9-Sep	4.83	5.95	467	corrected	
t	6	297,234	5,389,813	2,318	24-Jun	9-Sep	3.50	4.66	467	corrected	
F	7	297,158	5,389,554	2,354	24-Jun	9-Sep	4.20	5.36	467	corrected	
C	8	296,753	5,389,173	2,450	24-Jun	8-Sep	3.50	4.66	467	corrected	
k	9	297,099	5,389,341	2,407	14-Jul	9-Sep	1.10	NA	467	corrected	
G	10	297,004	5,389,140	2,475	14-Jul	8-Sep	1.25	NA	467	corrected	
A	11	296,746	5,389,407	2,376	14-Jul	9-Sep	1.93	NA	467	corrected	
B	12	296,993	5,389,589	2,326	14-Jul	9-Sep	1.80	NA	467	corrected	

ID	**Old ID #**	**Δ Snow Height (m)**	**Δ Firn Height (m)**	**Δ Ice Height (m)**	**Total Meas. Δ Height (m)**	**Δ Mass – Snow (m w.e.)**	**Δ Mass – Firn (m w.e.)**	**Δ Mass – Ice (m w.e.)**	**b_s (m w.e.)**	**b_w (m w.e.)**	***b_a (m w.e.)***
*E	*1	-3.33	N/O	N/O	N/O	-1.56	N/O	N/O	N/O	1.56	N/O
r	2	-4.92	0.00	-2.04	-6.96	-2.30	0.00	-1.78	-4.08	2.30	-1.78
D	3	-6.43	-0.18	-0.65	-7.26	-3.00	-0.13	-0.57	-3.70	3.00	-0.70
q	4	-4.82	-0.50	-1.68	-7.00	-2.25	-0.36	-1.47	-4.08	2.25	-1.83
s	5	-5.95	0.00	-0.74	-6.69	-2.78	0.00	-0.65	-3.43	2.78	-0.65
t	6	-4.66	0.00	-2.47	-7.13	-2.18	0.00	-2.16	-4.34	2.18	-2.16
F	7	-5.36	0.00	-1.57	-6.93	-2.50	0.00	-1.37	-3.88	2.50	-1.37
C	8	-4.66	0.00	-2.37	-7.03	-2.18	0.00	-2.07	-4.25	2.18	-2.07
k	9	-1.10	0.00	-2.65	-3.75	-0.51	0.00	-2.32	N/O	N/O	-2.32
G	10	-1.25	0.00	-2.20	-3.45	-0.58	0.00	-1.92	N/O	N/O	-1.92
A	11	-1.93	0.00	-2.05	-3.98	-0.90	0.00	-1.79	N/O	N/O	-1.79

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B	12	-1.80	0.00	-2.00	-3.80	-0.84	0.00	-1.75	N/O	N/O	-1.75
	Count:	8	7	11	7	8	7	11	7	8	11
	Mean:	-5.02	-0.10	-1.86	-7.00	-2.34	-0.07	-1.62	-3.96	2.34	-1.67
	Median:	-4.87	0.00	-2.04	-7.00	-2.27	0.00	-1.78	-4.08	2.27	-1.79
	StdDev:	0.94	0.19	0.66	0.18	0.44	0.14	0.57	0.32	0.44	0.55
	Min:	-6.43	-0.50	-2.65	-7.26	-3.00	-0.36	-2.32	-4.34	1.56	-2.32
	Max:	-3.33	0.00	-0.65	-6.69	-1.56	0.00	-0.57	-3.43	3.00	-0.65
	Range:	3.10	0.50	2.00	0.57	1.45	0.36	1.75	0.91	1.45	1.67

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Table S15: 2008 ablation stake sites
Coordinates: *NAD83 UTM Zone 12N*

2008											
ID	**Old ID #**	**Easting**	**Northing**	**Elev (m)**	**Install Date**	**Final Visit Date**	**Measured Snow Depth on Install Date (m)**	**‡Snow Depth on June 16 (m)**	**Snow Density (kg m^{-3})**	**GPS**	
A	1	296,746	5,389,407	2,376	9-Jul	11-Sep	4.00	5.85	463	corrected	
B	2	296,993	5,389,588	2,326	9-Jul	10-Sep	4.60	6.45	463	corrected	
C	3	296,712	5,389,167	2,454	10-Jul	11-Sep	5.10	6.75	463	corrected	
D	4	296,682	5,388,898	2,542	10-Jul	12-Sep	6.00	8.15	463	corrected	
E	5	296,441	5,389,174	2,449	10-Jul	12-Sep	2.85	4.55	463	corrected	
F	6	297,158	5,389,555	2,353	10-Jul	10-Sep	5.30	6.95	463	corrected	
G	7	297,004	5,389,140	2,475	10-Jul	11-Sep	5.00	6.45	463	corrected	

ID	**Old ID #**	**Δ Snow Height (m)**	**Δ Firn Height (m)**	**Δ Ice Height (m)**	**Total Meas. Δ Height (m)**	**Δ Mass – Snow (m w.e.)**	**Δ Mass – Firn (m w.e.)**	**Δ Mass – Ice (m w.e.)**	***b_s* (m w.e.)**	**b_w (m w.e.)**	***b_a (m w.e.)***
A	1	-5.15	0.00	0.00	-5.15	-2.38	0.00	0.00	-2.38	2.71	0.32
B	2	-5.14	0.00	0.00	-5.14	-2.38	0.00	0.00	-2.38	2.99	0.61
C	3	-5.01	0.00	0.00	-5.01	-2.32	0.00	0.00	-2.32	3.13	0.81
D	4	-4.11	0.00	0.00	-4.11	-1.90	0.00	0.00	-1.90	3.77	1.87
E	5	-4.28	0.00	-0.51	-4.79	-1.98	0.00	-0.45	-2.43	2.11	-0.32
F	6	-4.66	0.00	0.00	-4.66	-2.16	0.00	0.00	-2.16	3.22	1.06
G	7	-4.36	0.00	0.00	-4.36	-2.02	0.00	0.00	-2.02	2.99	0.97
Count:		7	7	7	7	7	7	7	7	7	7
Mean:		-4.67	0.00	-0.07	-4.75	-2.16	0.00	-0.06	-2.23	2.99	0.76
Median:		-4.66	0.00	0.00	-4.79	-2.16	0.00	0.00	-2.32	2.99	0.81
StdDev:		0.43	0.00	0.19	0.40	0.20	0.00	0.17	0.20	0.51	0.68
Min:		-5.15	0.00	-0.51	-5.15	-2.38	0.00	-0.45	-2.43	2.11	-0.32
Max:		-4.11	0.00	0.00	-4.11	-1.90	0.00	0.00	-1.90	3.77	1.87
Range:		1.04	0.00	0.51	1.04	0.48	0.00	0.45	0.52	1.67	2.19

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Table S16: 2009 ablation stake sites
Coordinates: *NAD83 UTM Zone 12N*

2009											
ID	**Old ID #**	**Easting**	**Northing**	**Elev (m)**	**Install Date**	**Final Visit Date**	**Measured Snow Depth on Install Date (m)**	**‡Snow Depth on June 16 (m)**	**Snow Density (kg m^{-3})**	**GPS**	
A	1	296,749	5,389,407	2,376	16-Jun	18-Sep	N/O	3.55	570	corrected	
B	2	296,994	5,389,586	2,326	16-Jun	18-Sep	N/O	3.75	572	corrected	
D	4	296,682	5,388,899	2,543	17-Jun	18-Sep	N/O	6.60	588	corrected	
E	5	296,453	5,389,183	2,449	16-Jun	18-Sep	N/O	2.20	557	corrected	
F	6	297,158	5,389,555	2,352	16-Jun	18-Sep	N/O	4.00	574	corrected	
G	7	297,004	5,389,142	2,475	17-Jun	18-Sep	N/O	3.75	572	corrected	
ID	**Old ID #**	**Δ Snow Height (m)**	**Δ Firn Height (m)**	**Δ Ice Height (m)**	**Total Meas. Δ Height (m)**	**Δ Mass – Snow (m w.e.)**	**Δ Mass – Firn (m w.e.)**	**Δ Mass – Ice (m w.e.)**	***b_s* (m w.e.)**	**b_w (m w.e.)**	***b_a (m w.e.)***
A	1	-3.66	-0.26	-1.73	-5.65	-2.09	-0.19	-1.51	-3.79	2.03	-1.76
B	2	-3.75	-0.76	-1.32	-5.83	-2.14	-0.55	-1.15	-3.85	2.14	-1.70
D	4	-6.35	0.00	0.00	-6.35	-3.73	0.00	0.00	-3.73	3.88	0.15
E	5	-2.49	0.00	-2.56	-5.05	-1.39	0.00	-2.24	-3.63	1.23	-2.40
F	6	-4.28	-1.51	-0.76	-6.55	-2.46	-1.09	-0.66	-4.21	2.29	-1.91
G	7	-3.72	-1.38	-1.27	-6.37	-2.13	-0.99	-1.11	-4.23	2.14	-2.09
Count:		6	6	6	6	6	6	6	6	6	6
Mean:		-4.04	-0.65	-1.27	-5.97	-2.32	-0.47	-1.11	-3.90	2.29	-1.62
Median:		-3.74	-0.51	-1.30	-6.09	-2.14	-0.37	-1.13	-3.82	2.14	-1.84
StdDev:		1.27	0.68	0.87	0.57	0.77	0.49	0.76	0.25	0.87	0.90
Min:		-6.35	-1.51	-2.56	-6.55	-3.73	-1.09	-2.24	-4.23	1.23	-2.40
Max:		-2.49	0.00	0.00	-5.05	-1.39	0.00	0.00	-3.63	3.88	0.15
Range:		3.86	1.51	2.56	1.50	2.34	1.09	2.24	0.61	2.65	2.55

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Table S17: 2010 ablation stake sites
Coordinates: *NAD83 UTM Zone 12N*

2010											
ID	**Old ID #**	**Easting**	**Northing**	**Elev (m)**	**Install Date**	**Final Visit Date**	**Measured Snow Depth on Install Date (m)**	**Normalized Date Snow Depth (m)**	**Snow Density (kg m^{-3})**	**GPS**	
A	1	296,743	5,389,407	2,380	23-Jun	2-Oct	4.10	N/A	574	corrected	
B	2	296,990	5,389,585	2,324	23-Jun	2-Oct	4.00	N/A	574	corrected	
C	3	296,712	5,389,162	2,464	23-Jun	2-Oct	5.45	N/A	582	corrected	
D	4	296,686	5,388,896	2,549	23-Jun	2-Oct	6.40	N/A	587	corrected	
E	5	296,443	5,389,176	2,461	23-Jun	2-Oct	4.85	N/A	579	corrected	
F	6	297,158	5,389,562	2,352	23-Jun	2-Oct	4.60	N/A	578	corrected	
G	7	297,003	5,389,133	2,486	23-Jun	2-Oct	4.70	N/A	578	corrected	

ID	**Old ID #**	**Δ Snow Height (m)**	**Δ Firn Height (m)**	**Δ Ice Height (m)**	**Total Meas. Δ Height (m)**	**Δ Mass – Snow (m w.e.)**	**Δ Mass – Firn (m w.e.)**	**Δ Mass – Ice (m w.e.)**	***b*$_s$ (m w.e.)**	**b$_w$ (m w.e.)**	***b*$_a$ *(m w.e.)***
A	1	-4.10	0.00	-0.96	-5.06	-2.36	0.00	-0.84	-3.19	2.36	-0.84
B	2	-4.00	0.00	-1.03	-5.03	-2.29	0.00	-0.90	-3.20	2.29	-0.90
C	3	-5.18	0.00	0.00	-5.18	-3.02	0.00	0.00	-3.02	3.17	0.16
D	4	-4.49	0.00	0.00	-4.49	-2.63	0.00	0.00	-2.63	3.75	1.12
E	5	-4.85	0.00	-0.31	-5.16	-2.81	0.00	-0.27	-3.08	2.81	-0.27
F	6	-4.60	0.00	-0.14	-4.74	-2.66	0.00	-0.12	-2.78	2.66	-0.12
G	7	-4.70	0.00	-0.07	-4.77	-2.72	0.00	-0.06	-2.78	2.72	-0.06
Count:		7	7	7	7	7	7	7	7	7	7
Mean:		-4.56	0.00	-0.36	-4.92	-2.64	0.00	-0.31	-2.95	2.82	-0.13
Median:		-4.60	0.00	-0.14	-5.03	-2.66	0.00	-0.12	-3.02	2.72	-0.12
StdDev:		0.41	0.00	0.45	0.26	0.25	0.00	0.39	0.22	0.50	0.68
Min:		-5.18	0.00	-1.03	-5.18	-3.02	0.00	-0.90	-3.20	2.29	-0.90
Max:		-4.00	0.00	0.00	-4.49	-2.29	0.00	0.00	-2.63	3.75	1.12
Range:		1.18	0.00	1.03	0.69	0.72	0.00	0.90	0.56	1.46	2.02

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Table S18: 2011 ablation stake sites
Coordinates: *NAD83 UTM Zone 12N*

2011												
ID	**Old ID #**	**Easting**	**Northing**	**Elev (m)**	**Install Date**	**Final Visit Date**	**Measured Snow Depth on Install Date (m)**	**Normalized Date Snow Depth (m)**	**Snow Density (kg m^{-3})**	**GPS**		
A	1	296,741	5,389,397	2,380	24-Jun	3-Oct	6.45	N/A	587	corrected		
B	2	296,992	5,389,597	2,324	24-Jun	3-Oct	6.55	N/A	587	corrected		
C	3	296,714	5,389,170	2,464	24-Jun	3-Oct	7.40	N/A	591	corrected		
D	4	296,687	5,388,900	2,549	24-Jun	3-Oct	10.00	N/A	599	corrected		
E	5	296,440	5,389,172	2,461	24-Jun	3-Oct	5.65	N/A	583	corrected		
F	6	297,155	5,389,566	2,352	24-Jun	3-Oct	5.90	N/A	584	corrected		
G	7	296,997	5,389,120	2,486	24-Jun	3-Oct	7.20	N/A	590	corrected		
ID	**Old ID #**	**Δ Snow Height (m)**	**Δ Firn Height (m)**	**Δ Ice Height (m)**	**Total Meas. Δ Height (m)**	**Δ Mass – Snow (m w.e.)**	**Δ Mass – Firn (m w.e.)**	**Δ Mass – Ice (m w.e.)**	***b_s* (m w.e.)**	**b_w (m w.e.)**	***b_a (m w.e.)***	
A	1	-6.41	0.00	0.00	-6.41	-3.76	0.00	0.00	-3.76	3.79	0.02	
B	2	-5.92	0.00	0.00	-5.92	-3.48	0.00	0.00	-3.48	3.85	0.37	
C	3	-6.05	0.00	0.00	-6.05	-3.57	0.00	0.00	-3.57	4.37	0.80	
D	4	-5.16	0.00	0.00	-5.16	-3.09	0.00	0.00	-3.09	5.99	2.90	
E	5	-5.65	0.00	0.00	-5.65	-3.30	0.00	0.00	-3.30	3.30	0.00	
F	6	-5.62	0.00	0.00	-5.62	-3.28	0.00	0.00	-3.28	3.45	0.16	
G	7	-5.62	0.00	0.00	-5.62	-3.32	0.00	0.00	-3.32	4.25	0.93	
Count:		7	7	7	7	7	7	7	7	7	7	
Mean:		-5.78	0.00	0.00	-5.78	-3.40	0.00	0.00	-3.40	4.14	0.74	
Median:		-5.65	0.00	0.00	-5.65	-3.32	0.00	0.00	-3.32	3.85	0.37	
StdDev:		0.40	0.00	0.00	0.40	0.22	0.00	0.00	0.22	0.90	1.02	
Min:		-6.41	0.00	0.00	-6.41	-3.76	0.00	0.00	-3.76	3.30	0.00	
Max:		-5.16	0.00	0.00	-5.16	-3.09	0.00	0.00	-3.09	5.99	2.90	
Range:		1.25	0.00	0.00	1.25	0.67	0.00	0.00	0.67	2.69	2.90	

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Table S19: 2012 ablation stake sites
Coordinates: *NAD83 UTM Zone 12N*

2012											
ID	**Old ID #**	**Easting**	**Northing**	**Elev (m)**	**Install Date**	**Final Visit Date**	**Measured Snow Depth on Install Date (m)**	**‡Snow Depth on June 28 (m)**	**Snow Density (kg m^{-3})**	**GPS**	
A	1	296,737	5,389,404	2,377	12-Jul	1-Oct	4.20	5.15	581	uncorrected	
B	2	296,987	5,389,587	2,323	12-Jul	1-Oct	4.60	5.10	580	uncorrected	
C	3	296,709	5,389,173	2,454	12-Jul	1-Oct	5.15	6.40	587	uncorrected	
D	4	296,679	5,388,904	2,547	12-Jul	1-Oct	8.50	9.00	596	uncorrected	
E	5	296,440	5,389,175	2,450	12-Jul	1-Oct	3.00	4.25	575	uncorrected	
F	6	297,156	5,389,559	2,358	12-Jul	1-Oct	5.00	6.15	586	uncorrected	
G	7	296,995	5,389,129	2,480	12-Jul	1-Oct	5.40	6.65	588	uncorrected	

ID	**Old ID #**	**Δ Snow Height (m)**	**Δ Firn Height (m)**	**Δ Ice Height (m)**	**Total Meas. Δ Height (m)**	**Δ Mass – Snow (m w.e.)**	**Δ Mass – Firn (m w.e.)**	**Δ Mass – Ice (m w.e.)**	***b_s* (m w.e.)**	**b_w (m w.e.)**	***b_a (m w.e.)***
A	1	-5.17	-0.26	-0.79	-6.22	-3.00	-0.19	-0.69	-3.88	2.99	-0.89
B	2	-5.12	-0.64	-0.14	-5.90	-2.97	-0.46	-0.12	-3.55	2.96	-0.59
C	3	-6.20	0.00	0.00	-6.20	-3.64	0.00	0.00	-3.64	3.75	0.12
D	4	-5.53	0.00	0.00	-5.53	-3.30	0.00	0.00	-3.30	5.36	2.07
E	5	-4.24	0.00	-1.53	-5.77	-2.44	0.00	-1.34	-3.78	2.45	-1.33
F	6	-6.04	0.00	0.00	-6.04	-3.54	0.00	0.00	-3.54	3.60	0.06
G	7	-5.54	0.00	0.00	-5.54	-3.26	0.00	0.00	-3.26	3.91	0.65
Count:		7	7	7	7	7	7	7	7	7	7
Mean:		-5.41	-0.13	-0.35	-5.89	-3.16	-0.09	-0.31	-3.56	3.58	0.01
Median:		-5.53	0.00	0.00	-5.90	-3.26	0.00	0.00	-3.55	3.60	0.06
StdDev:		0.65	0.25	0.59	0.29	0.40	0.18	0.52	0.23	0.94	1.13
Min:		-6.20	-0.64	-1.53	-6.22	-3.64	-0.46	-1.34	-3.88	2.45	-1.33
Max:		-4.24	0.00	0.00	-5.53	-2.44	0.00	0.00	-3.26	5.36	2.07
Range:		1.96	0.64	1.53	0.69	1.20	0.46	1.34	0.62	2.92	3.40

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Table S20: 2013 ablation stake sites
Coordinates: *NAD83 UTM Zone 12N*

2013

ID	Old ID #	Easting	Northing	Elev (m)	Install Date	Final Visit Date	Measured Snow Depth on Install Date (m)	Normalized Date Snow Depth (m)	Snow Density (kg m^{-3})	GPS
A	1	296,735	5,389,408	2,382	11-Jun	27-Sep	5.05	N/A	580	corrected
B	2	296,989	5,389,589	2,328	11-Jun	27-Sep	5.15	N/A	581	corrected
C	3	296,711	5,389,178	2,460	11-Jun	27-Sep	5.05	N/A	580	corrected
D	4	296,684	5,388,910	2,551	11-Jun	27-Sep	7.25	N/A	590	corrected
E	5	296,439	5,389,176	2,458	11-Jun	27-Sep	4.50	N/A	577	corrected
F	6	297,154	5,389,565	2,348	11-Jun	27-Sep	5.30	N/A	581	corrected
G	7	296,996	5,389,131	2,486	11-Jun	27-Sep	5.05	N/A	580	corrected

ID	Old ID #	Δ Snow Height (m)	Δ Firn Height (m)	Δ Ice Height (m)	Total Meas. Δ Height (m)	Δ Mass – Snow (m w.e.)	Δ Mass – Firn (m w.e.)	Δ Mass – Ice (m w.e.)	b_s (m w.e.)	b_w (m w.e.)	b_a (m w.e.)
A	1	-5.05	0.00	-2.24	-7.29	-2.93	0.00	-1.96	-4.89	2.93	-1.96
B	2	-5.15	0.00	-1.88	-7.03	-2.99	0.00	-1.64	-4.63	2.99	-1.64
C	3	-5.05	-0.22	-2.14	-7.41	-2.93	-0.16	-1.87	-4.96	2.93	-2.03
D	4	-6.66	0.00	0.00	-6.66	-3.93	0.00	0.00	-3.93	4.28	0.35
E	5	-4.50	0.00	-2.69	-7.19	-2.60	0.00	-2.35	-4.95	2.60	-2.35
F	6	-5.33	-0.11	-1.38	-6.82	-3.10	-0.08	-1.21	-4.38	3.08	-1.30
G	7	-5.05	-2.14	0.00	-7.19	-2.93	-1.54	0.00	-4.47	2.93	-1.54
Count:		7	7	7	7	7	7	7	7	7	7
Mean:		-5.26	-0.35	-1.48	-7.08	-3.06	-0.25	-1.29	-4.60	3.11	-1.50
Median:		-5.05	0.00	-1.88	-7.19	-2.93	0.00	-1.64	-4.63	2.93	-1.64
StdDev:		0.67	0.79	1.08	0.27	0.41	0.57	0.95	0.38	0.54	0.88
Min:		-6.66	-2.14	-2.69	-7.41	-3.93	-1.54	-2.35	-4.96	2.60	-2.35
Max:		-4.50	0.00	0.00	-6.66	-2.60	0.00	0.00	-3.93	4.28	0.35
Range:		2.16	2.14	2.69	0.75	1.33	1.54	2.35	1.03	1.68	2.70

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Table S21: 2014 ablation stake sites
Coordinates: *NAD83 UTM Zone 12N*

2014											
ID	**Old ID #**	**Easting**	**Northing**	**Elev (m)**	**Install Date**	**Final Visit Date**	**Installation Date Snow Depth (m)**	**Normalized Date Snow Depth (m)**	**Snow Density (kg m^{-3})**	**GPS**	
A	1	296,735	5,389,408	2,382	11-Jun	18-Sep	5.45	N/A	549	uncorrected	
B	2	296,989	5,389,589	2,328	11-Jun	18-Sep	5.62	N/A	536	uncorrected	
C	3	296,711	5,389,178	2,460	11-Jun	18-Sep	5.19	N/A	507	uncorrected	
D	4	296,684	5,388,910	2,551	11-Jun	18-Sep	7.95	N/A	551	uncorrected	
E	5	296,439	5,389,176	2,458	11-Jun	18-Sep	3.80	N/A	536	uncorrected	
F	6	297,154	5,389,565	2,348	11-Jun	18-Sep	5.27	N/A	536	uncorrected	
G	7	296,996	5,389,131	2,486	11-Jun	18-Sep	5.28	N/A	536	uncorrected	
ID	**Old ID #**	**Δ Snow Height (m)**	**Δ Firn Height (m)**	**Δ Ice Height (m)**	**Total Meas. Δ Height (m)**	**Δ Mass – Snow (m w.e.)**	**Δ Mass – Firn (m w.e.)**	**Δ Mass – Ice (m w.e.)**	***b_s* (m w.e.)**	**b_w (m w.e.)**	***b_a (m w.e.)***
A	1	-5.45	0.00	-0.44	-5.89	-2.99	0.00	-0.38	-3.38	2.99	-0.38
B	2	-5.62	0.00	-0.13	-5.75	-3.01	0.00	-0.11	-3.13	3.01	-0.11
C	3	-5.19	0.00	-0.94	-6.13	-2.63	0.00	-0.82	-3.45	2.63	-0.82
D	4	-5.58	0.00	0.00	-5.58	-3.07	0.00	0.00	-3.07	4.38	1.31
E	5	-3.80	0.00	-1.57	-5.37	-2.04	0.00	-1.37	-3.41	2.04	-1.37
F	6	-5.27	0.00	-0.36	-5.63	-2.82	0.00	-0.31	-3.14	2.82	-0.31
G	7	-5.28	-0.07	0.00	-5.35	-2.83	-0.05	0.00	-2.88	2.83	-0.05
Count:		7	7	7	7	7	7	7	7	7	7
Mean:		-5.17	-0.01	-0.49	-5.67	-2.77	-0.01	-0.43	-3.21	2.96	-0.25
Median:		-5.28	0.00	-0.36	-5.63	-2.83	0.00	-0.31	-3.14	2.83	-0.31
StdDev:		0.63	0.03	0.58	0.28	0.36	0.02	0.50	0.21	0.71	0.83
Min:		-5.62	-0.07	-1.57	-6.13	-3.07	-0.05	-1.37	-3.45	2.04	-1.37
Max:		-3.80	0.00	0.00	-5.35	-2.04	0.00	0.00	-2.88	4.38	1.31
Range:		1.82	0.07	1.57	0.78	1.04	0.05	1.37	0.57	2.34	2.68

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Table S22: 2015 ablation stake sites
Coordinates: *NAD83 UTM Zone 12N*

2015											
ID	**Old ID #**	**Easting**	**Northing**	**Elev (m)**	**Install Date**	**Final Visit Date**	**Installation Date Snow Depth (m)**	**Normalized Date Snow Depth (m)**	**Snow Density (kg m^{-3})**	**GPS**	
A	1	296,741	5,389,395	2,387	25-May	22-Sep	5.00	N/A	491	uncorrected	
B	2	296,996	5,389,582	2,338	25-May	22-Sep	4.62	N/A	506	uncorrected	
C	3	296,713	5,389,175	2,460	25-May	22-Sep	5.60	N/A	521	uncorrected	
D	4	296,689	5,388,900	2,552	25-May	22-Sep	6.43	N/A	506	uncorrected	
E	5	296,443	5,389,175	2,454	25-May	22-Sep	3.93	N/A	506	uncorrected	
F	6	297,156	5,389,565	2,363	25-May	22-Sep	4.68	N/A	506	uncorrected	
G	7	296,994	5,389,123	2,488	25-May	22-Sep	5.08	N/A	506	uncorrected	
Z	N/A	296,825	5,388,829	2,567	15-Jun	22-Sep	6.67	8.34	506	uncorrected	

ID	**Old ID #**	**Δ Snow Height (m)**	**Δ Firn Height (m)**	**Δ Ice Height (m)**	**Total Meas. Δ Height (m)**	**Δ Mass – Snow (m w.e.)**	**Δ Mass – Firn (m w.e.)**	**Δ Mass – Ice (m w.e.)**	***b_s* (m w.e.)**	**b_w (m w.e.)**	***b_a (m w.e.)***
A	1	-5.00	0.00	-2.15	-7.15	-2.46	0.00	-1.88	-4.33	2.46	-1.88
B	2	-4.62	0.00	-2.31	-6.93	-2.34	0.00	-2.02	-4.36	2.34	-2.02
C	3	-5.60	0.00	-2.28	-7.88	-2.92	0.00	-1.99	-4.91	2.92	-1.99
D	4	-6.43	-0.55	0.00	-6.98	-3.25	-0.40	0.00	-3.65	3.25	-0.40
E	5	-3.93	0.00	-3.01	-6.94	-1.99	0.00	-2.63	-4.62	1.99	-2.63
F	6	-4.68	0.00	-2.29	-6.97	-2.37	0.00	-2.00	-4.37	2.37	-2.00
G	7	-5.08	-2.17	0.00	-7.25	-2.57	-1.56	0.00	-4.13	2.57	-1.56
Z	N/A	-6.58	0.00	0.00	-6.58	-3.33	0.00	0.00	-3.33	4.22	0.89
Count:		8	8	8	8	8	8	8	8	8	8
Mean:		-5.24	-0.34	-1.51	-7.09	-2.65	-0.24	-1.32	-4.21	2.76	-1.45
Median:		-5.04	0.00	-2.22	-6.98	-2.51	0.00	-1.94	-4.35	2.51	-1.94
StdDev:		0.91	0.76	1.27	0.38	0.47	0.55	1.11	0.51	0.70	1.14
Min:		-6.58	-2.17	-3.01	-7.88	-3.33	-1.56	-2.63	-4.91	1.99	-2.63
Max:		-3.93	0.00	0.00	-6.58	-1.99	0.00	0.00	-3.33	4.22	0.89
Range:		2.65	2.17	3.01	1.30	1.34	1.56	2.63	1.58	2.23	3.52

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