Snow Drift Surveys
Summit Station, 2007-2012

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U.S. Army Cold Regions Research and Engineering Laboratory (ERDC-CRREL)

For the National Science Foundation, Office of Polar Programs
Arctic Research Support and Logistics Program

January 2013

Methods

Snow elevation surveys were collected with a Trimble GPS.

Surveys were converted to point shapefiles then interpolated into 3x3m grids using Inverse Distance Weighting (IDW) in ArcGIS.

A grid was provided to guide initial surveys but was not followed closely; data points were often collected in different locations each time (Prior to 10/27/10).

In October 2010 the surveys began to follow a different approach; data was collected along a serpentine pattern throughout the main camp area.

SUMMIT CAMP DRIFT SURVEY GRID

SUMMIT CAMP GREENLAND
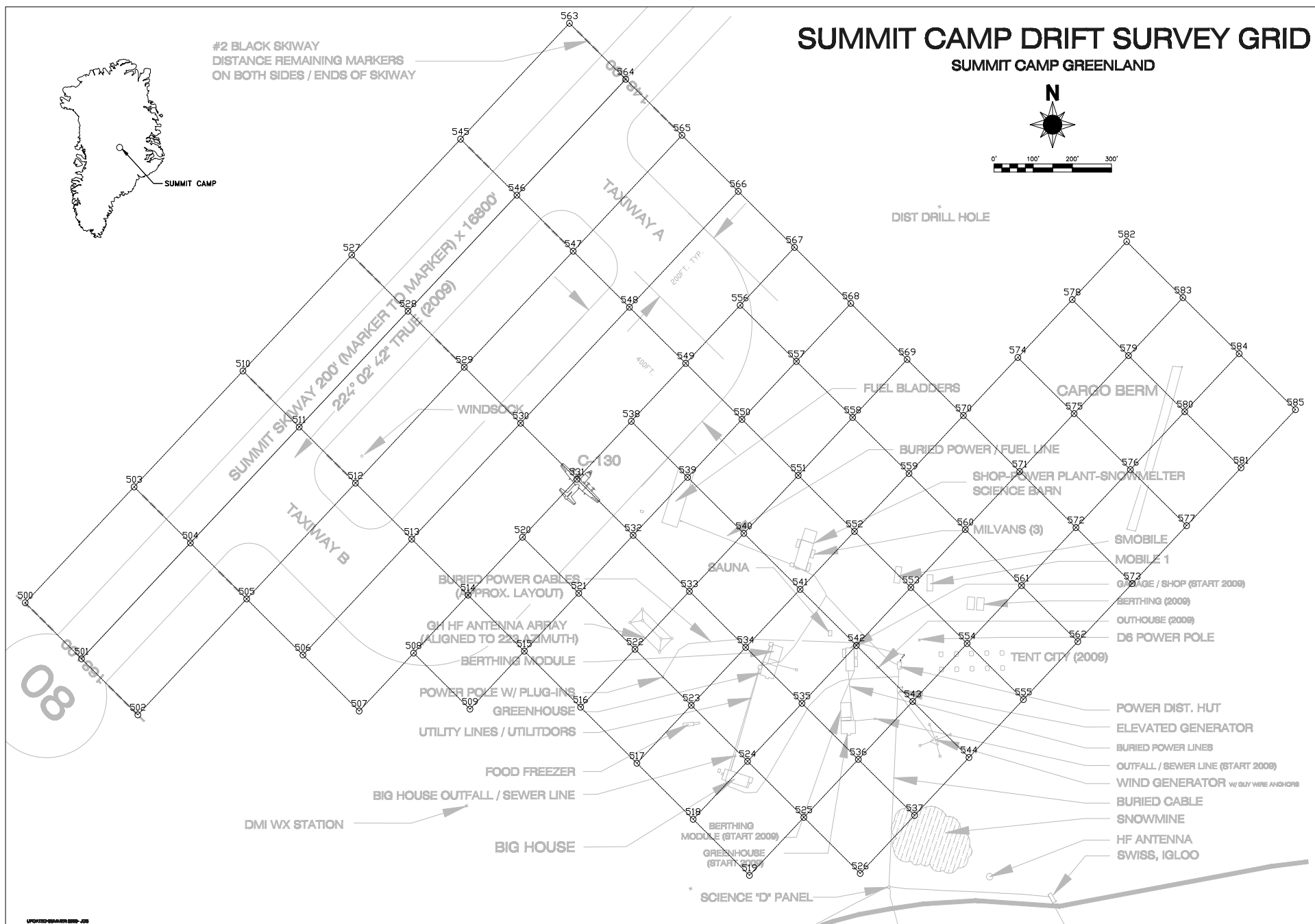
Summit Station
Snow Survey Date: 10/16/07

Fuel 2
Fuel 1
Fuel 3 Fuel 4
SO Barn
Green House
SMM1
Big House

Elevation (m)

Survey location (above)
Snow elevation map (left)

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Summit Station
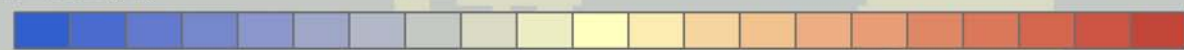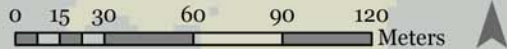Snow Survey Date: 02/15/08

Fuel 2
Fuel 1
Fuel 3 Fuel 4
SO Barn
Green House
SMM1
Big House

Elevation (m)

3,201 3,202 3,203 3,204 3,205 3,206 3,207 3,208 3,209 3,210 3,211 3,212 3,213 3,214 3,215 3,216 3,217 3,218 3,219 3,220 3,221

0 15 30 60 90 120 Meters

Summit Station
Snow Survey Date: 02/15/08

Fuel 2
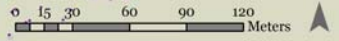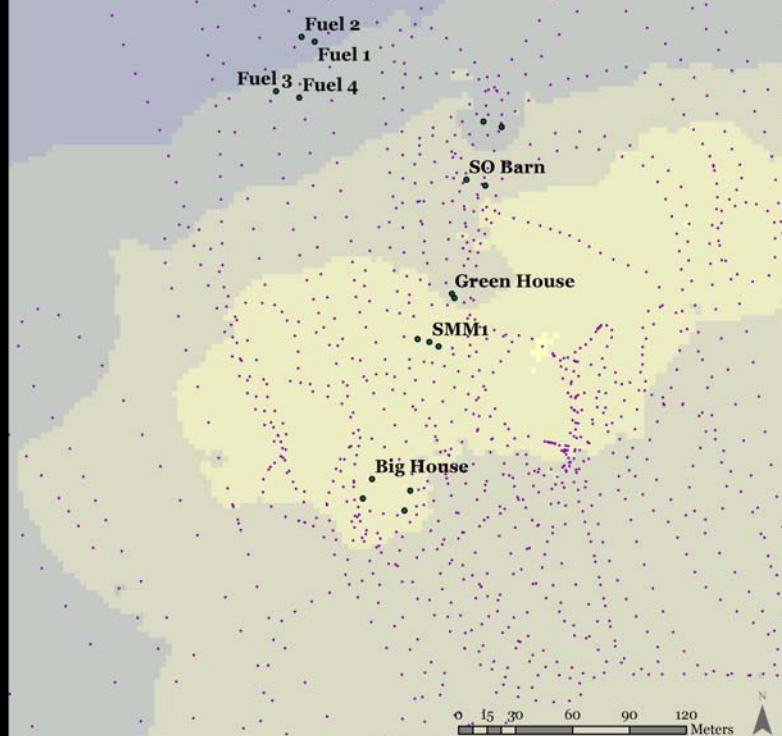Fuel 1
Fuel 3 Fuel 4
SO Barn
Green House
SMM1
Big House

0 15 30 60 90 120 Meters

Summit Station
Snow Survey Date: 04/13/08

Elevation (m)

3,201 3,202 3,203 3,204 3,205 3,206 3,207 3,208 3,209 3,210 3,211 3,212 3,213 3,214 3,215 3,216 3,217 3,218 3,219 3,220 3,221

Fuel 2
Fuel 1
Fuel 3 Fuel 4
SO Barn
Green House
SMM1
Big House

0 15 30 60 90 120 Meters
N

6

Summit Station
Snow Survey Date: 08/28/08

Fuel 2
Fuel 1
Fuel 3 Fuel 4

SO Barn

Green House

SMM1

Big House

Elevation (m)

0 15 30   60   90   120   Meters

3,201 3,202 3,203 3,204 3,205 3,206 3,207 3,208 3,209 3,210 3,211 3,212 3,213 3,214 3,215 3,216 3,217 3,218 3,219 3,220 3,221
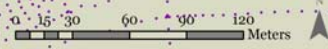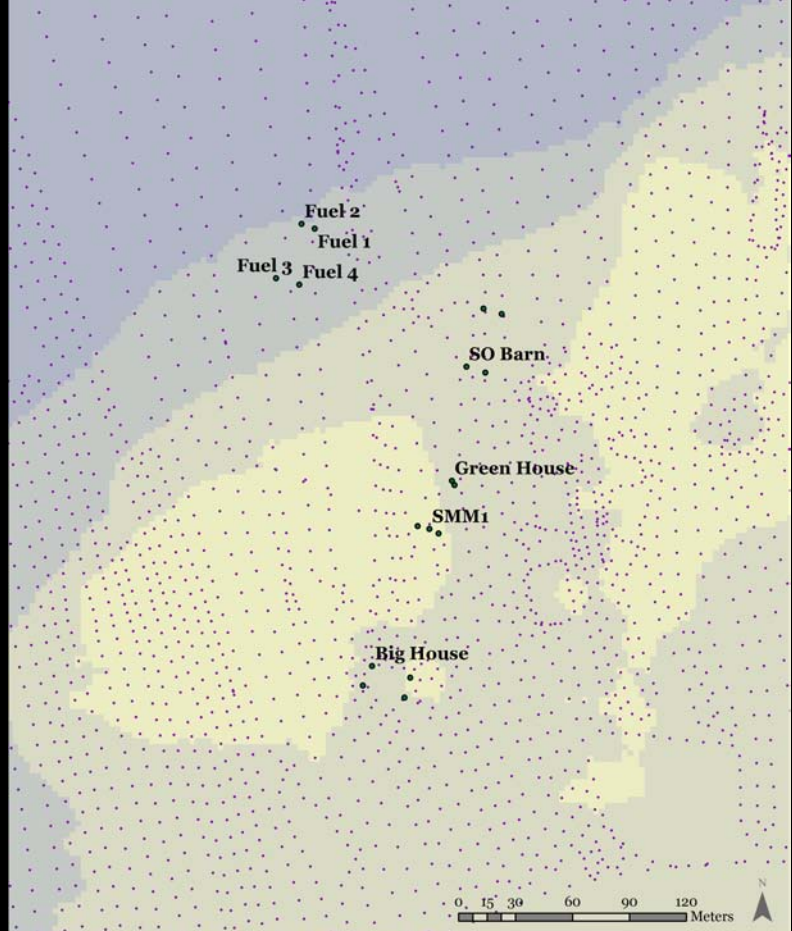
Summit Station
Snow Survey Date: 11/03/08

Fuel 2
Fuel 1
Fuel 3   Fuel 4

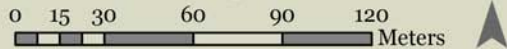SO Barn

Green House

SMM1

Big House

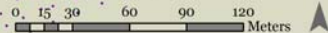Elevation (m)

0   15 30   60   90   120   Meters

3,201 3,202 3,203 3,204 3,205 3,206 3,207 3,208 3,209 3,210 3,211 3,212 3,213 3,214 3,215 3,216 3,217 3,218 3,219 3,220 3,221

Summit Station
Snow Survey Date: 01/25/09

Fuel 2
Fuel 1
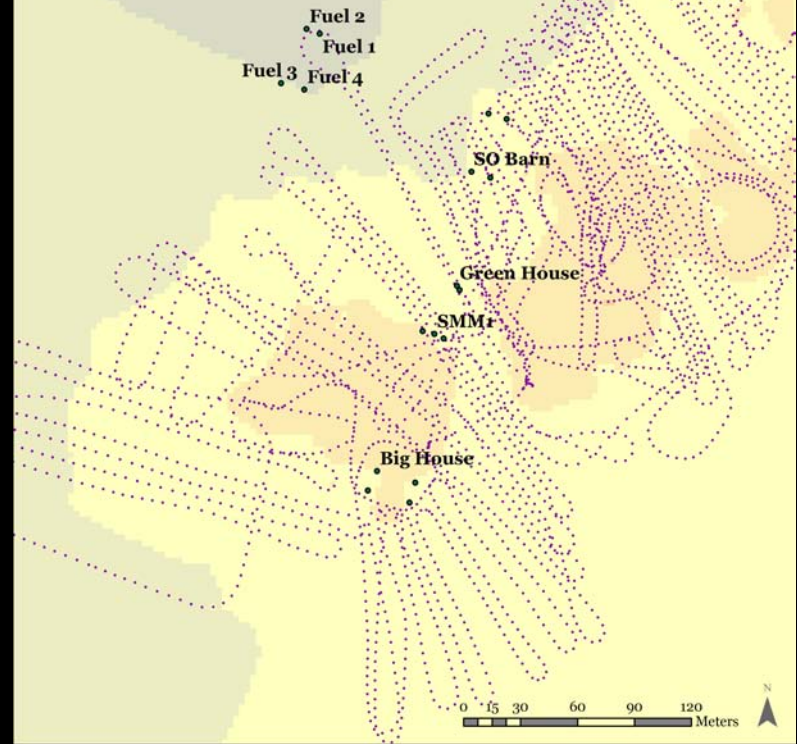Fuel 3 Fuel 4
SO Barn
Green House
SMM1
Big House

Elevation (m)

3,201 3,202 3,203 3,204 3,205 3,206 3,207 3,208 3,209 3,210 3,211 3,212 3,213 3,214 3,215 3,216 3,217 3,218 3,219 3,220 3,221

0 15 30 60 90 120 Meters

N

9

Summit Station
Snow Survey Date: 03/19/09

Fuel 2
Fuel 1
Fuel 3 Fuel 4

SO Barn

Green House

SMM1

Big House

Elevation (m)

0   15   30   60   90   120
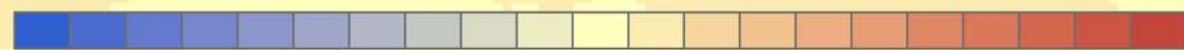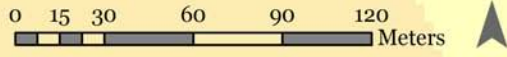Meters

N

3,201 3,202 3,203 3,204 3,205 3,206 3,207 3,208 3,209 3,210 3,211 3,212 3,213 3,214 3,215 3,216 3,217 3,218 3,219 3,220 3,221

Summit Station
Snow Survey Date: 03/19/09

Fuel 2
Fuel 1
Fuel 3 Fuel 4

SO Barn

Green House

SMM1

Big House

0   15   30   60   90   120
Meters

N

10

Summit Station
Snow Survey Date: 08/25/09

Fuel 2
Fuel 1
Fuel 3 Fuel 4

SO Barn

Green House

SMM1

Big House

0 15 30   60   90   120
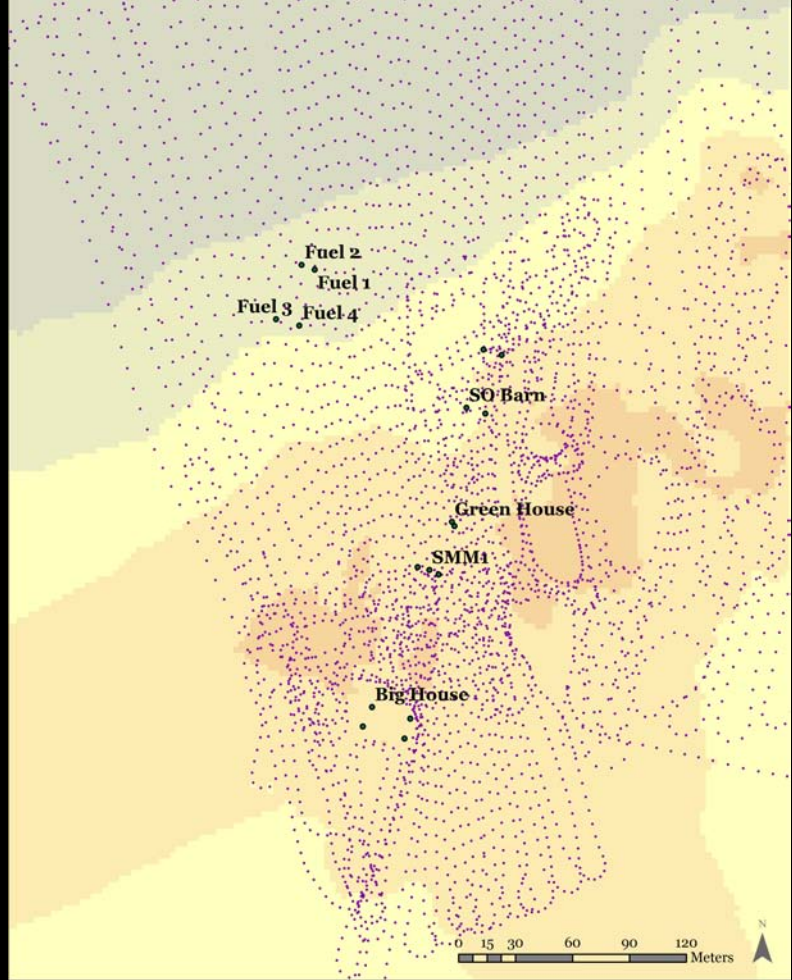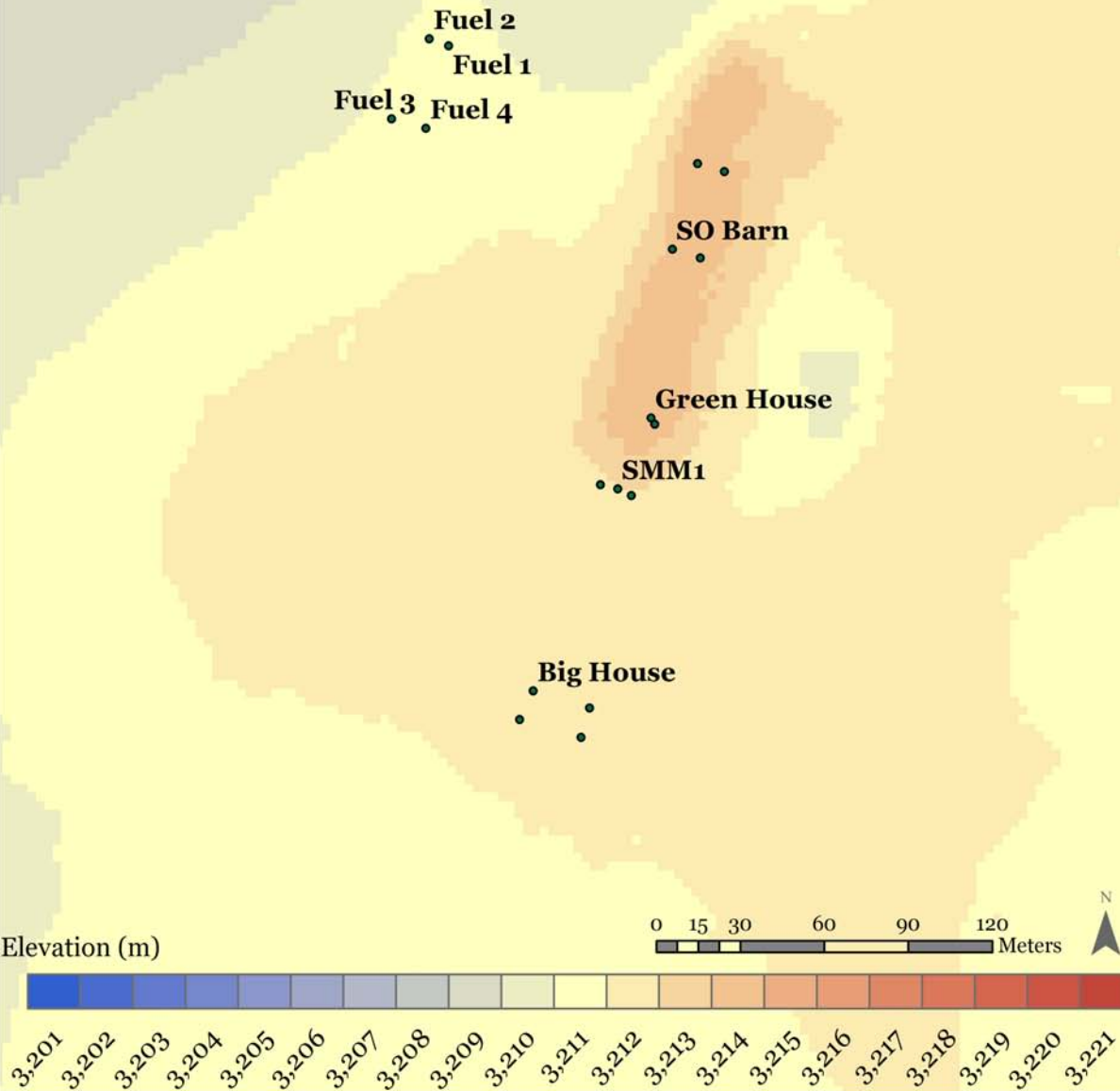Meters
N

Elevation (m)

3,201 3,202 3,203 3,204 3,205 3,206 3,207 3,208 3,209 3,210 3,211 3,212 3,213 3,214 3,215 3,216 3,217 3,218 3,219 3,220 3,221
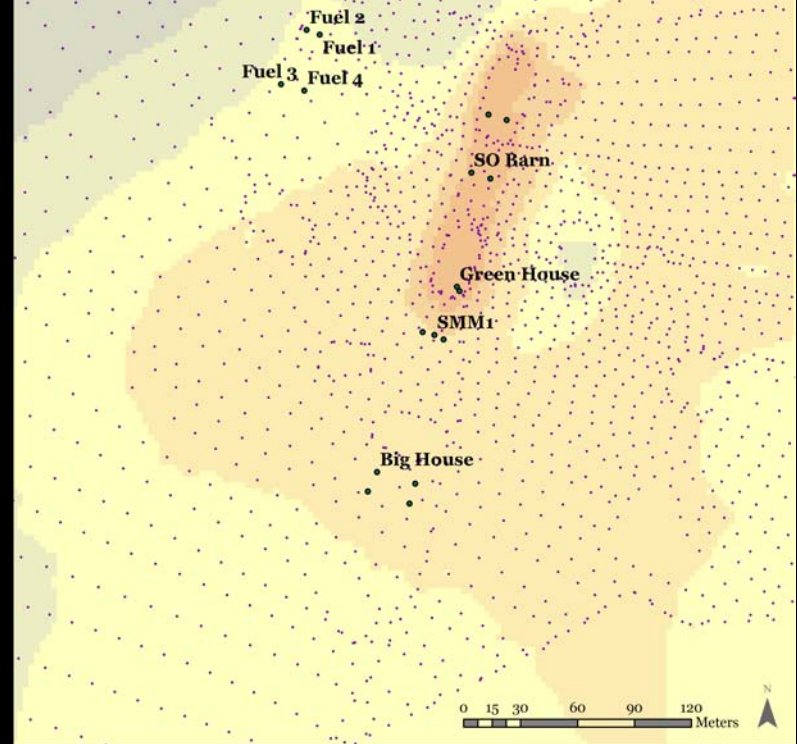
Summit Station
Snow Survey Date: 02/01/10

Fuel 2
Fuel 1
Fuel 3 Fuel 4

SO Barn

Green House

SMM1

Big House
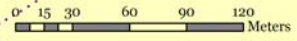
Elevation (m)

3,201 3,202 3,203 3,204 3,205 3,206 3,207 3,208 3,209 3,210 3,211 3,212 3,213 3,214 3,215 3,216 3,217 3,218 3,219 3,220 3,221

0 15 30   60   90   120
Meters

N

Summit Station
Snow Survey Date: 10/27/10

Fuel 2
Fuel 1
Fuel 3 Fuel 4

SO Barn

Green House

SMM1

Big House

0   15   30   60   90   120
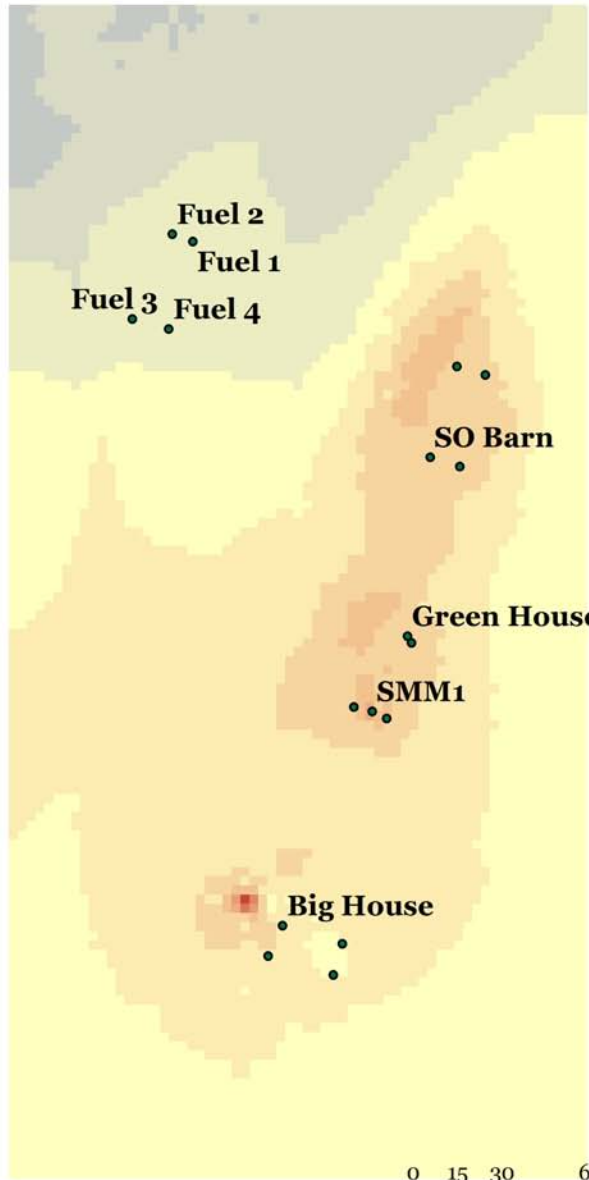Meters   N

Elevation (m)

3,201 3,202 3,203 3,204 3,205 3,206 3,207 3,208 3,209 3,210 3,211 3,212 3,213 3,214 3,215 3,216 3,217 3,218 3,219 3,220 3,221
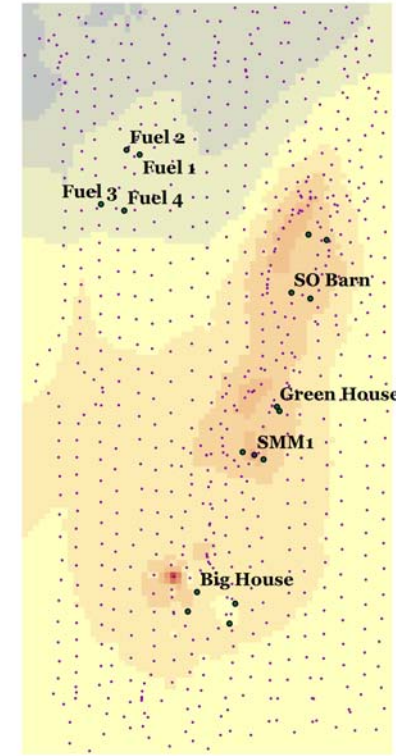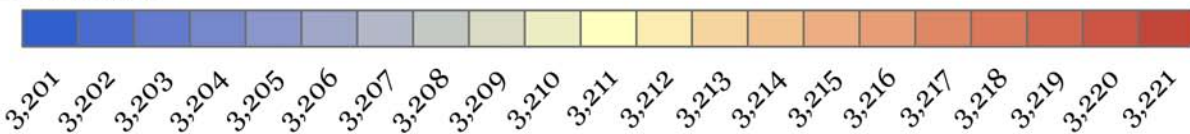
Summit Station
Snow Survey Date: 09/14/11

Elevation (m)

0 15 30 60 90 120 Meters

Summit Station
Snow Survey Date: 09/29/12

Fuel 2
Fuel 1
Fuel 3 Fuel 4

SO Barn

Green House

SMM1

Big House

Elevation (m)

0 15 30   60   90   120
Meters

3,201 3,202 3,203 3,204 3,205 3,206 3,207 3,208 3,209 3,210 3,211 3,212 3,213 3,214 3,215 3,216 3,217 3,218 3,219 3,220 3,221

Summit Station
Snow Survey Date: 09/29/12

Fuel 2
Fuel 1
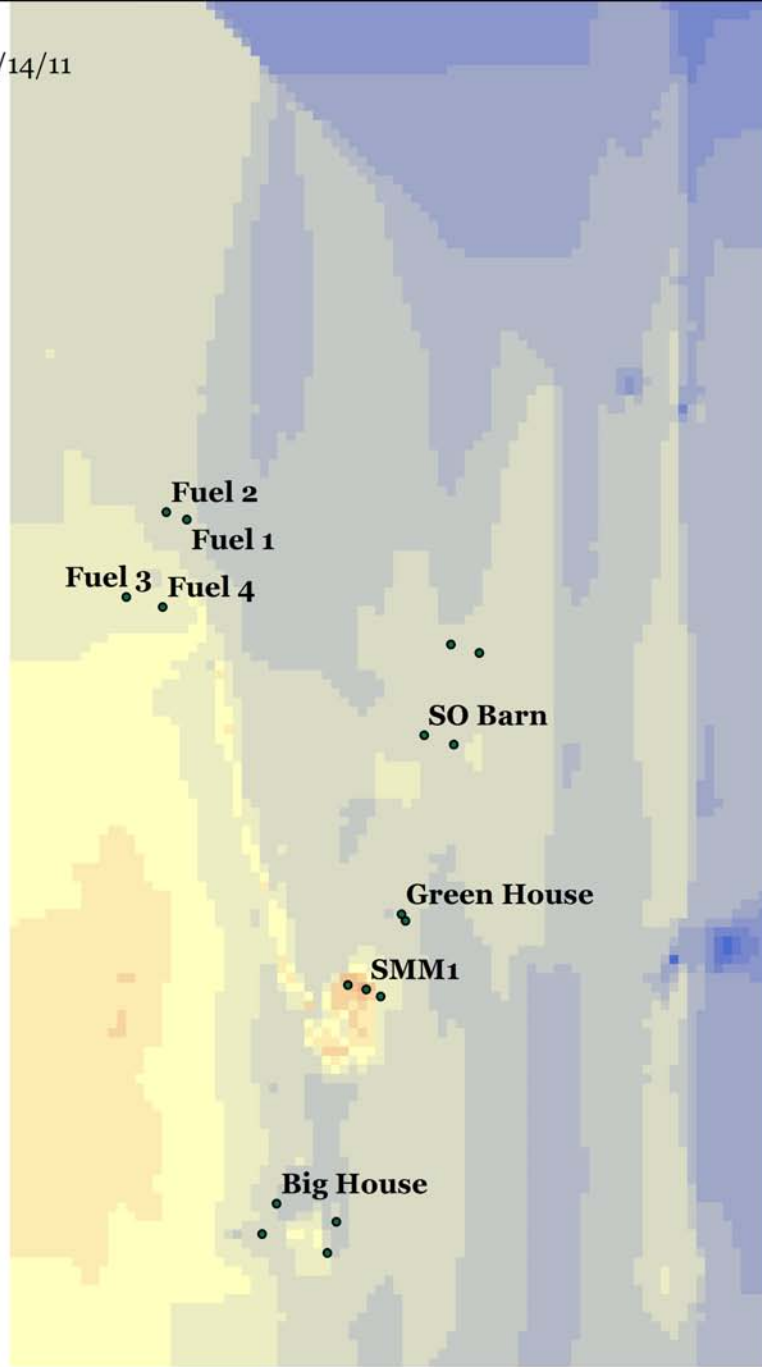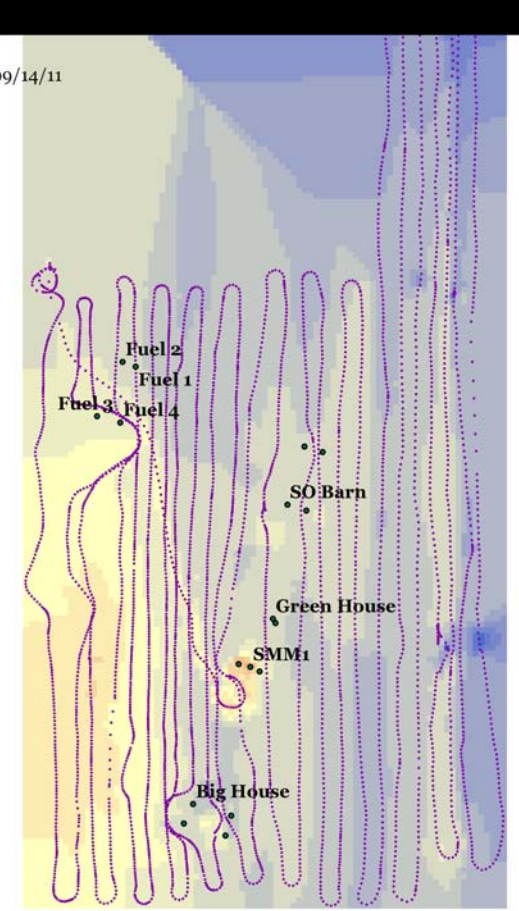Fuel 3 Fuel 4

SO Barn

Green House

SMM1

Big House

0 15 30   60   90   120
Meters

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Acknowledgements

GPS Survey Data collected by Polar Field Services staff at Summit

FTP server managed by Katrine Gorham (PFS)

Grid survey design by Stephen Newman

GPS data processing by Art Gelvin (ERDC-CRREL, Fairbanks, AK)

GIS analysis and cartography by Amy Burzynski and Stephen Newman