Bonanza Creek Experimental Forest Metadata Report (BNZ)

Fairbanks, Alaska

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on Mon Sep 22 08:36:28 2008

Research Area Information

Bonanza Creek Experimental Forest

Research Area Information

Harvest URL - Option 1

http://137.229.80.157/bnz_climate.txt

Harvest URL -Option 2

http://users.iab.uaf.edu/~jay_jones/BNZ_Q/BNZQ.txt

Site URL

http://www.lter.uaf.edu/

Site north bounding coordinate (decimal degree) 64.77376

Site west bounding coordinate (decimal degree) .....-148.34713

Site south bounding coordinate (decimal degree) 64.68825

Site east bounding coordinate (decimal degree) .....-148.10477

Site Climate URL

http://www.lter.uaf.edu/

Site Map URL

http://www.lter.uaf.edu/IMS_Intro.cfm

USGS Harvest URL

http://gce-lter.marsci.uga.edu/harvest/usgs/bnz_lter.txt

Meteorlogical Stations

CRREL

Meteorological Station

Latitude (decimal degrees) 65.154

Longitude (decimal degrees) 147.4901667

Topography

CRREL-MET-1 is on a slight south-facing slope in open canopy black spruce, feather moss, and sphagnum moss.

Photo URL

http://www.uaf.edu/water/projects/cpcrw/metdata/crrel/current.html

CT1600

Meteorological Station

Latitude (decimal degrees) 65.17466667

Longitude (decimal degrees) .....-147.49200000

Topography

South facing ridge about halfway up Caribou Peak

History

Precipitation data has been collected using a Fischer Porter weighing rain gage at this site since 1976. A sensor for air temperature was added in 1992. The site was upgraded in June 2001 with the addition of a tipping bucket rain gage. The site must be visited periodically to download the data from a Campbell datalogger.

Photo URL

http://www.lter.uaf.edu/Site_detail.cfm?site_id=9

CT2100

Meteorological Station

Latitude (decimal degrees) 65.18216667

Longitude (decimal degrees) .....-147.49233333

Elevation (meters; a.m.s.l.) 640

Area Description

CT2100 is a meteorological site along the Caribou Peak trail, at an elevation of 640 meters above sea level

History

Precipitation data has been collected using a Fischer Porter weighing rain gage at this site since 1976. A sensor for air temperature was added in November 1993. The site was upgraded in June 2001 with the addition of a tipping bucket rain gage. The site must be visited periodically to download the data from a Campbell datalogger.

Photo URL

http://www.lter.uaf.edu/Site_detail.cfm?site_id=10

FP1A

Meteorological Station

Latitude (decimal degrees) 64.69888888

Longitude (decimal degrees) .....-148.25500000

Begin Date..... 1985

Area Description

FP1A consists of an open stand of several species of willow and thinleaf alder. In 1985, when this site was established, the willows on this site were 1- 3 years of age, averaged 1 meter in height and had 20 percent. Cover and density of the most abundant shrubs were as follows: Salix nova-anglaea, 164,000 stems/ha, 15%; S. alaxensis, 59,000 stems/ha, 6%; S. brachycarpa 25,500 stems/ha, 8%. Salix interior, S. lasiandra, and Alnus tenuifolia all had cover values of less thant 5% and densities of under 20,000 stems/ha. Balsam poplar (Populus balsamifera) saplings numbered 58,000/ha. The herb layer and the silt layer have varied at this site with time since last flooding and silt deposition. In general the herbaceous layer has varied from 10 to 35 percent cover and bare mineral soil from 25 to nearly 100 percent immediately after flooding. A thin leaf litter has been present during some periods but was frequently buried or swept away by flooding. The herb layer is dominated by Equisetum variegatum and Equisetum palustre. Scattered throughout the stand, but providing little cover, are the herbs, Carex aurea, Calamagrostis canadensis, Solidago canadensis, Antenarria pucherrima, and Spiranthes romanzoffiana. Arrowgrass (Triglochin palustris), a halophyte, also occurs in the stand. Occasional patches of the moss Ceratodon purpurea and the liverwort, Preesia quadrata were recorded but were also short lived because of the frequent flooding and siltation. By 1995 the shrub cover had increased to 35% but average heights of the Salix spp. were still only one meter, although some individuals were over 2 m tall. The most

conspicuous change in the stand has resulted from the invasion of alder seedlings between 1991 and 1993 and their rapid growth during the summer of 1995 and 1996. A few white spruce (Picea glauca) seedlings (350/ha) have also established in the stand but have average heights of only 20 cm in 1994. Balsam poplar seedlings and saplings number 65,000/ha and some have reached heights of over 2 m.

Photo URL

http://www.lter.uaf.edu/Site_detail.cfm?site_id=1

Air Temperature

Begin Date 19890601

End Date ..... ongoing

Data Logger Sampling Interval ..... 5 minutes

Summary Interval ..... hourly

Data Accuracy (degree celsius) ..... +/-.04 C

Instrument Height (meters) ..... 1.5 meters

Instrumentation Description

ES-110 Omnidata temperature and relative humidity probe.6/1/1989-4/8/1992. HMP Vaisala probe (AKA Omnidata ES120) 4/8/1992-6/21/1995. HMP-C Vaisala probe from Campbell Scientific 6/21/1995-9/14/1999. HMP-35C Vaisala probe from Campbell Scientific 9/14/1999-present. All using a Fenwell Model UUT-51J1 for sensing temperature.

Methods Description

Omnidata EL-824 Easyloggers 6/1/1988-6/21/1995. CR10 Campbell Scientific micrologger 6/21/1995-present.

Sensor History

ES-110 Omnidata temperature and relative humidity probe.6/1/1989-4/8/1992. HMP Vaisala probe (AKA Omnidata ES120) 4/8/1992-6/21/1995. HMP-C Vaisala probe from Campbell Scientific 6/21/1995-9/14/1999. HMP-35C Vaisala probe from Campbell Scientific 9/14/1999-present.

Calibration History

ES-110 Omnidata temperature and relative humidity probe.6/1/1989-4/8/1992. HMP Vaisala probe (AKA Omnidata ES120) 4/8/1992-6/21/1995. HMP-C Vaisala probe from Campbell Scientific 6/21/1995-9/14/1999. HMP-35C Vaisala probe from Campbell Scientific 9/14/1999-present. Upgrade to New sensor every 4 years.

Minimum QC Threshold (degree celsius) ..... -55.0 C

Maximum QC Threshold (degree celsius) ..... 50.0 C

Relative Humidity

Begin Date 19890601

End Date ..... ongoing

Data Logger Sampling Interval ..... 5 minutes

Summary Interval ..... hourly

Data Accuracy (percent) ..... +/-2% 0 to 90% +/-3% 90 to 100% humidity

Instrument Height (meters) ..... 1.5 meters

Instrumentation Description

ES-110 Omnidata temperature and relative humidity probe.6/1/1989-4/8/1992. HMP Vaisala probe (AKA Omnidata ES120) 4/8/1992-6/21/1995. HMP-C Vaisala probe from Campbell Scientific 6/21/1995-9/14/1999. HMP-35C Vaisala probe from Campbell Scientific 9/14/1999-present.

Methods Description

Omnidata EL-824 Easyloggers 6/1/1988-6/21/1995. CR10 Campbell Scientific micrologger 6/21/1995-present.

Sensor History

ES-110 Omnidata temperature and relative humidity probe.6/1/1989-4/8/1992. HMP Vaisala probe (AKA Omnidata ES120) 4/8/1992-6/21/1995. HMP-C Vaisala probe from Campbell Scientific 6/21/1995-9/14/1999. HMP-35C Vaisala probe from Campbell Scientific 9/14/1999-present.

Calibration History

ES-110 Omnidata temperature and relative humidity probe.6/1/1989-4/8/1992. HMP Vaisala probe (AKA Omnidata ES120) 4/8/1992-6/21/1995. HMP-C Vaisala probe from Campbell Scientific 6/21/1995-9/14/1999. HMP-35C Vaisala probe from Campbell Scientific 9/14/1999-present. Upgrade to New sensor every 4 years.

Minimum QC Threshold (percent) 10

Maximum QC Threshold (percent) 100

Soil Temperature

Begin Date 19890601

End Date ..... ongoing

Data Logger Sampling Interval ..... hourly

Summary Interval ..... hourly

Data Accuracy (degree celsius) ... +/- .4 deg.C in range of -24 deg.C to 48 deg.C, +/-0.9degC. over -38 to 53 deg.C

Instrument Height (meters) ..... 10 cm below top of mineral soil and O horizon.

Instrumentation Description

Omnidata es-060 soil temperature probe which is a thermistor Fenwall model UUT 51J1 with a 249K precision resistor in a half bridge configuration. campbell scientific 107 probe july 11,2002 to present. (Also a 249K resistor)

Methods Description

data collected with the omnidata easylogger 1988 to 1995. Campbell Scientific cr10 ,1995-present. YSI (yellow springs instrument) probe at the same depth was read manually weekly to use as a comparison. Data graphed and compared to other sites.

Sensor History

omnidata es-060 probe used from 1989 to 2002. Campbell Scientific 107 probe installed 2002. The es-106 probe is still in operation to be used as a comparison and backup.

Calibration History

omnidata es-060 probe used from 1989 to 2002. Campbell Scientific 107 probe installed 2002.

Minimum QC Threshold (degree celsius) .....-20

Maximum QC Threshold (degree celsius) 25

FP2A

Meteorological Station

Latitude (decimal degrees) 64.69916666

Longitude (decimal degrees) .....-148.25083333

Begin Date..... 1985

Area Description

The vegetation at this site is an open, 30 year old balsam poplar stand with a dense tall shrub understory of alder. Balsam poplar density is 1200 ha with diameters ranging between 4 and 10 cm and heights of 12 15 m. Basal area of the trees was 10 m2/ha in 1985. Tree growth is rapid in this stand with an average annual diameter increase of XXX mm. The dominant vegetation in the stand is Alnus tenuifolia with a density of 6500 stems/ha , heights averaging 8 m., diameters ranging up to 15 cm and a basal area of 21 m2/ha. Occasional Salix alaxensis and S. nova anglaea also reach up itno the alder canopy. Litterfall is heavy in this stand because of the dense alder and balsam poplar canopy, with 250 g/m2/yr of leaf litter and an additional 100 gm/m2/yr of woody debris, primarily from the alder. Because of the heavy shading from the dense alder canopy, understorey vegetation is scarce with only 6 percent cover. Equisetum arvense and E. palustre are the dominant herbs but there are scattered individuals or small aptches of Calamagrostis canadensis, Equisetum variegatum, Hedysarum mackennzii, and Achillea borealis. The mosses Brachythecium salebrosum and Eurynchium puchellum are found commonly on the bases of the balsam poplar trees but have very low cover values.

Photo URL

http://www.lter.uaf.edu/Site_detail.cfm?site_id=19

Air Temperature

Begin Date 19890606
End Date ..... ongoing
Data Logger Sampling Interval ..... 5 minutes
Summary Interval ..... hourly
Data Accuracy (degree celsius) ..... +/-0.4 C.
Instrument Height (meters) ..... 1.5 meters

Instrumentation Description

ES-110 temperature and relative humidity probe 1988-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1994. HMP-C Vaisala probe from Campbell Scientific 1994-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present. All Using Fenwell model UUT-51J1 thermistor for sensing temperature.

Methods Description

Omnidata EL-824 Easyloggers 1988-1995. Campbell Scientific cr10 micrologger 5/23/1995-present.

Sensor History

ES-110 temperature and relative humidity probe 6/2/1988-9/18/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/18/1991-5/23/1995. HMP-C Vaisala probe from Campbell Scientific 5/23/1995-10/14/1998 HMP-35C Vaisala probe from Campbell Scientific 10/14/1998-present

Calibration History

ES-110 temperature and relative humidity probe 6/2/1988-9/18/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/18/1991-6/15/1995. HMP-C Vaisala probe from Campbell Scientific 6/15/1995-11/4/1998 HMP-35C Vaisala probe from Campbell Scientific 11/4/1998-present Upgraded to new sensor every 4 years.

Minimum QC Threshold (degree celsius) ..... -55.0
Maximum QC Threshold (degree celsius) 50.0

Relative Humidity

Begin Date 19890606
End Date ..... ongoing
Data Logger Sampling Interval ..... 5 minutes
Summary Interval ..... hourly
Data Accuracy (percent) ..... +/-2% 0 to 90% +/-3% 90 to 100% humidity
Instrument Height (meters) ..... 1.5 meters

Instrumentation Description

ES-110 temperature and relative humidity probe 1988-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1994. HMP-C Vaisala probe from Campbell Scientific 1994-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present.

Methods Description

Omnidata EL-824 Easyloggers 1988-1995. Campbell Scientific cr10 micrologger 5/23/1995-present.

Sensor History

ES-110 temperature and relative humidity probe 6/2/1988-9/18/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/18/1991-5/23/1995. HMP-C Vaisala probe from Campbell Scientific 5/23/1995-10/14/1998 HMP-35C Vaisala probe from Campbell Scientific 10/14/1998-present

Calibration History

ES-110 temperature and relative humidity probe 6/2/1988-9/18/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/18/1991-6/15/1995. HMP-C Vaisala probe from Campbell Scientific 6/15/1995-11/4/1998 HMP-35C Vaisala probe from Campbell Scientific 11/4/1998-present Upgraded to new sensor every 4 years.

Minimum QC Threshold (percent) 10

Maximum QC Threshold (percent) 100

Soil Temperature

Begin Date..... 19890606

End Date..... ongoing

Data Logger Sampling Interval..... hourly

Summary Interval .....hourly

Data Accuracy (degree celsius) ...+/- .4 deg.C in range of -24 deg.C to 48 deg.C, +/-0.9degC. over -38 to 53 deg.C

Instrument Height (meters) .....10 cm below top of mineral soil and O horizon.

Instrumentation Description

Omnidata es-060 soil temperature probe which is a thermistor Fenwall model UUT 51J1 with a 249K precision resistor in a half bridge configuration.campbell scientific 107 probe Aug 16 1998 to present.(Also a 249K Thermistor.)

Methods Description

Data collected with the omnidata easylogger 1988 to 1995. Campbell Scientific cr10 ,1995-present. YSI (yellow springs instrument) probe at the same depth was read manually weekly to use as a comparison. Data graphed and compared to other sites.

Sensor History

Omnidata es-060 probe 1989-1998. campbell scientific 107 probe Aug 16 1998 to present. Data collected with the omnidata easylogger 1988 to 1995. Campbell Scientific cr10 ,1995-present.

Calibration History

omnidata es-060 probe used from 1989 to 1998. Campbell Scientific 107 probe installed Aug. 16 1998.

Minimum QC Threshold (degree celsius) .....-20

Maximum QC Threshold (degree celsius) 20

FP3A

Meteorological Station

Latitude (decimal degrees) 64.72333333

Longitude (decimal degrees) .....-148.14944444

Begin Date..... 1987

Area Description

The mixed balsam poplar and white s[pruce stage is transitional between the deciduous balsam poplar stages and the conifer shite and black spruce stands. In this stand 100 year old balsam poplar are dominant in the canopy but there is a well developed understory of 40 - 50 year old white spruce that are beginning to reach into the canopy. The white spruce range from 20 - 30 cm in diameter with heights of 15-20 m while balsam poplar have diameters of from 30-50cm and are 20- 25 m in height. Density of white spruce is 480/ha and balsam poplar, 300/ha: basal area is 15m2/ha and 9 m2/ha. There is heavy mortality in the balsam poplar because of the prevalence of heart rot. The shrub layer consists primarily of Alnus tenuifolia and Rosa acicularis with a total cover of 50%. The herbaceous and moss layer in this stand is very sparse, perhaps due to frequent flooding and heavy silt deposition. the herbaceous layer covers less than 20% and is comprised of a number of species, the most common being Cornus canadensis, Equisetum arvense, and Carex concinna. Deciduous leaf and twig litter form a thick layer on the forest floor. On downed logs and under some of the larger spruce, however, patches of feather-mosses, primarily Hylocomium splendens, occur. Total moss cover is under 10%.

Photo URL

http://www.lter.uaf.edu/Site_detail.cfm?site_id=22

Air Temperature

Begin Date..... 19880607

End Date..... ongoing

Data Logger Sampling Interval..... 5 minutes

Summary Interval .....hourly

Data Accuracy (degree celsius) .....+/-0.4 C

Instrument Height (meters) .....1.5 meters

Instrumentation Description

ES-110 temperature and relative humidity probe 1988-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1994. HMP-C Vaisala probe from Campbell Scientific 1995-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present. All Using Fenwell model UUT-51J1 thermistor for sensing temperature.

Methods Description

Omnidata EL-824 Easyloggers 1988-1995. Campbell Scientific cr10 micrologger 5/23/1995-present.

Sensor History

ES-110 temperature and relative humidity probe 6/2/1988-9/19/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/19/1991-5/23/1995. HMP-C Vaisala probe from Campbell Scientific 5/23/1995-10/14/1998 HMP-35C Vaisala probe from Campbell Scientific 9/12/1998-present

Calibration History

ES-110 temperature and relative humidity probe 6/2/1988-7/17/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 7/17/1991-6/15/1995. HMP-C Vaisala probe from Campbell Scientific 6/15/1995-11/4/1998 HMP-35C Vaisala probe from Campbell Scientific 11/4/1998-present Upgraded to new sensor every 4 years.

Minimum QC Threshold (degree celsius) .....-55.0

Maximum QC Threshold (degree celsius) 50.0

Relative Humidity

Begin Date..... 19880607

End Date..... ongoing

Data Logger Sampling Interval..... 5 minutes

Summary Interval .....hourly

Data Accuracy (percent) .....+/-2% 0 to 90%, +/-3% 90 to 100%humidity

Instrument Height (meters) .....1.5 meters

Instrumentation Description

ES-110 temperature and relative humidity probe 1988-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1994. HMP-C Vaisala probe from Campbell Scientific 1995-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present.

Methods Description

Omnidata EL-824 Easyloggers 1988-1995. Campbell Scientific cr10 micrologger 5/23/1995-present.

Sensor History

ES-110 temperature and relative humidity probe 6/2/1988-9/19/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/19/1991-5/23/1995. HMP-C Vaisala probe from Campbell Scientific 5/23/1995-10/14/1998 HMP-35C Vaisala probe from Campbell Scientific 9/12/1998-present

Calibration History

ES-110 temperature and relative humidity probe 6/2/1988-7/17/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 7/17/1991-6/15/1995. HMP-C Vaisala probe from Campbell Scientific 6/15/1995-11/4/1998 HMP-35C Vaisala probe from Campbell Scientific 11/4/1998-present Upgraded to new sensor every 4 years.

Minimum QC Threshold (percent) 10

Maximum QC Threshold (percent) 100

Soil Temperature

Begin Date..... 19880607

End Date..... ongoing

Data Logger Sampling Interval..... hourly

Summary Interval .....hourly

Data Accuracy (degree celsius) ...+/- .4 deg.C in range of -24 deg.C to 48 deg.C, +/-0.9degC. over -38 to 53 deg.C

Instrument Height (meters) .....10 cm below top of mineral soil and O horizon.

Instrumentation Description

Omnidata es-060 probe 1988 to present.

Methods Description

Data collected with the omnidata easylogger 1988 to 1995. Campbell Scientific cr10 ,1995-present. YSI (yellow springs instrument) probe at the same depth was read manually weekly to use as a comparison. Data graphed and compared to other sites.

Sensor History

Omnidata es-060 probe 1988 to present.

Calibration History

Omnidata es-060 probe 1988 to present.

Minimum QC Threshold (degree celsius) .....-20

Maximum QC Threshold (degree celsius) 20

FP4A

Meteorological Station

Latitude (decimal degrees) 64.67972222

Longitude (decimal degrees) .....-148.23472222

Area Description

The spruce in FP4A are from 150 to 250 years old have a density of 400 trees/ha, average diameters and heights of 40 cm and 28 m, and a basal area of 30 m2/ha. Paper birch and decadent balsam poplar are scattered thoughout the stand. The shrub layer is a dominant feature of this white spruce stand. Rosa acicularis, Viburnum edule, and Alnus crispa are the most important shrubs and have a combined cover of 65%, approximately half of which is Alnus crispa. Sub shrubs and herbs also make up an importnt component of this stand, with a combined cover of nearly 70%. Linnaea borealis and Vaccinium vitis idaea are the most common sub shrubs on the forest floor while the herbaceous layer is made up primarily of Equisetum arvense, Geocaulon lividum, Pyrola segunda and P. asarifolia, Cornus canadensis, and the orchids Goodyera repens and Calypso bulbosa. The forest floor is comprised of a thick nearly continuous mat of feathermosses, primarily Hylocomium splendens, Rhytidiadelphus trequetrus and Ptilium crista castrensis. There are a few scattered clumps of Peltigera canina and Cladonia species in the moss mat, but their combined cover is less than 1%.

Photo URL

http://www.lter.uaf.edu/Site_detail.cfm?site_id=25

Air Temperature

Begin Date..... 19890516

End Date..... ongoing

Data Logger Sampling Interval..... 5 minutes

Summary Interval .....hourly

Data Accuracy (degree celsius) ..... +/-0.4

Instrument Height (meters) .....1.5 meters

Instrumentation Description

ES-110 temperature and relative humidity probe 1988-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1994. HMP-C Vaisala probe from Campbell Scientific 1995-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present. All Using Fenwell model UUT-51J1 thermistor for sensing temperature.

Methods Description

Omnidata EL-824 Easyloggers 1988-1995. Campbell Scientific cr10 micrologger 5/31/1995-present.

Sensor History

ES-110 temperature and relative humidity probe 6/2/1988-9/19/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/19/1991-5/31/1995. HMP-C Vaisala probe from Campbell Scientific 5/31/1995-9/12/1998 HMP-35C Vaisala probe from Campbell Scientific 9/12/1998-present

Calibration History

ES-110 temperature and relative humidity probe 6/2/1988-9/18/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/18/1991-6/15/1995. HMP-C Vaisala probe from Campbell Scientific 5/31/1995-9/12/1998 HMP-35C Vaisala probe from Campbell Scientific 9/12/1998-present Upgraded to new sensor every 4 years.

Minimum QC Threshold (degree celsius) .....-55.0

Maximum QC Threshold (degree celsius) 50.0

Relative Humidity

Begin Date..... 19890516

End Date..... ongoing

Data Logger Sampling Interval..... 5 minutes

Summary Interval .....hourly

Data Accuracy (percent) .....+/-2% 0 to 90%, +/-3% 90 to 100%humidity

Instrument Height (meters) .....1.5 meters

Instrumentation Description

ES-110 temperature and relative humidity probe 1988-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1994. HMP-C Vaisala probe from Campbell Scientific 1995-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present.

Methods Description

Omnidata EL-824 Easyloggers 1988-1995. Campbell Scientific cr10 micrologger 5/31/1995-present.

Sensor History

ES-110 temperature and relative humidity probe 6/2/1988-9/19/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/19/1991-5/31/1995. HMP-C Vaisala probe from Campbell Scientific 5/31/1995-9/12/1998 HMP-35C Vaisala probe from Campbell Scientific 9/12/1998-present

Calibration History

ES-110 temperature and relative humidity probe 6/2/1988-9/18/1991. HMP Vaisala

air temp and relative humidity probe (aka ES120 omnidata probe) 9/18/1991-6/15/1995. HMP-C Vaisala probe from Campbell Scientific 5/31/1995-9/12/1998 HMP-35C Vaisala probe from Campbell Scientific 9/12/1998-present Upgraded to new sensor every 4 years.

Minimum QC Threshold (percent) 10

Maximum QC Threshold (percent) 100

Soil Temperature

Begin Date..... 19890516

End Date..... ongoing

Data Logger Sampling Interval..... hourly

Summary Interval .....hourly

Data Accuracy (degree celsius) ...+/- .4 deg.C in range of -24 deg.C to 48 deg.C, +/-0.9degC. over -38 to 53 deg.C

Instrument Height (meters) .....10 cm below top of mineral soil and O horizon.

Instrumentation Description

Omnidata es-060 soil temperature probe which is a thermistor Fenwall model UUT 51J1 with a 249K precision resistor in a half bridge configuration.

Methods Description

1989 to 1995 Omnidata Easylogger. 1995 to present Campbell Scientific cr10. Compared to YSI (Yellow Springs Instr.) probes in stack adjacent to "logged" stack.

Sensor History

1989 to present. Omnidata es-060 soil temperature probe.

Calibration History

none

Minimum QC Threshold (degree celsius) .....-20

Maximum QC Threshold (degree celsius) 20

FP5A

Meteorological Station

Latitude (decimal degrees) 64.68333333

Longitude (decimal degrees) .....-148.26666666

Area Description

FP5A is an open stand of black spruce with occasional individuals of tamarack (Larix laricina) and paper birch (Betula papyrifera).Total tree canopy is 31%. Tree

density totals 1900 trees per hectare of which 1760 are black spruce, 40 tamarack and 80 paper birch. Total basal area of the stand is 15.1 m2/ha of which 12.1 is black spruce. Average diameter of the dominant black spruce is 15 cm, and heights range from 10 to 15 m The dominant spruce and tamarack in the stand are about 200 years old, but occasional younger trees occur. The tall shrub layer has 18% canopy cover and is primarily of Rosa acicularis, with widely scattered Salix glauca, Salix arbusculoides, and Salix planifolia. The low shrub layer is conspicuous and with 82% cover; mainly Ledum groenlandicum, Vaccinium vitis-idaea, V. uliginosum and Empetrum nigrum. Common herbs are Equisetum arvense, Geocaulon lividum and Cornus canadensis with a total herbaceous cover of 18%. The nearly continuous moss cover (82%) is dominated by Hylocomium splendens , Pleurozium schreberi and Aulacomnium palustris. Lichens have 12% cover with Peltigera aphthosa and Cladonia gracilis being the only common species.

Photo URL

http://www.lter.uaf.edu/Site_detail.cfm?site_id=28

Air Temperature

Begin Date 19890718

End Date ..... ongoing

Data Logger Sampling Interval ..... 5 minutes

Summary Interval ..... hourly

Data Accuracy (degree celsius) ..... +/-0.4 C

Instrument Height (meters) ..... 1.5 meters

Instrumentation Description

ES-110 temperature and relative humidity probe 1988-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1994. HMP-C Vaisala probe from Campbell Scientific 1995-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present. All Using Fenwell model UUT-51J1 thermistor for sensing temperature.

Methods Description

Omnidata EL-824 Easyloggers 1988-1995. Campbell Scientific cr10 micrologger 5/31/1995-present.

Sensor History

ES-110 temperature and relative humidity probe 5/31/1989-9/19/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/19/1991-5/31/1995. HMP-C Vaisala probe from Campbell Scientific 5/31/1995-9/12/1998 HMP-35C Vaisala probe from Campbell Scientific 9/12/1998-present

Calibration History

ES-110 temperature and relative humidity probe 7/18/1989-7/17/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 7/17/1991-5/31/1995. HMP-C Vaisala probe from Campbell Scientific

5/31/1995-9/12/1998 HMP-35C Vaisala probe from Campbell Scientific 9/12/1998-present Upgraded to new sensor every 4 years.

Minimum QC Threshold (degree celsius) .....-55.0

Maximum QC Threshold (degree celsius) 50.0

Relative Humidity

Begin Date..... 19890718

End Date..... ongoing

Data Logger Sampling Interval..... 5 minutes

Summary Interval .....hourly

Data Accuracy (percent) .....+/-2% 0 to 90%, +/-3% 90 to 100%humidity

Instrument Height (meters) .....1.5 meters

Instrumentation Description

ES-110 temperature and relative humidity probe 1988-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1994. HMP-C Vaisala probe from Campbell Scientific 1995-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present.

Methods Description

Omnidata EL-824 Easyloggers 1988-1995. Campbell Scientific cr10 micrologger 5/31/1995-present.

Sensor History

ES-110 temperature and relative humidity probe 5/31/1989-9/19/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/19/1991-5/31/1995. HMP-C Vaisala probe from Campbell Scientific 5/31/1995-9/12/1998 HMP-35C Vaisala probe from Campbell Scientific 9/12/1998-present

Calibration History

ES-110 temperature and relative humidity probe 7/18/1989-7/17/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 7/17/1991-5/31/1995. HMP-C Vaisala probe from Campbell Scientific 5/31/1995-9/12/1998 HMP-35C Vaisala probe from Campbell Scientific 9/12/1998-present Upgraded to new sensor every 4 years.

Minimum QC Threshold (percent) 10

Maximum QC Threshold (percent) 100

Soil Temperature

Begin Date..... 19890711

End Date..... ongoing

Data Logger Sampling Interval..... hourly

Summary Interval .....hourly

Data Accuracy (degree celsius) ...+/- .4 deg.C in range of -24 deg.C to 48 deg.C, +/-0.9degC. over -38 to 53 deg.C

Instrument Height (meters) .....10 cm below top of mineral soil and O horizon.

Instrumentation Description

Omnidata es-060 soil temperature probe which is a thermistor Fenwall model UUT 51J1 with a 249K precision resistor in a half bridge configuration.

Methods Description

1989 to 1995 Omnidata Easylogger. 1995 to present Campbell Scientific cr10. Compared to YSI (Yellow Springs Instr.) probes in stack adjacent to "logged" stack.

Sensor History

1989 to present. Omnidata es-060 soil temperature probe.

Calibration History

none

Minimum QC Threshold (degree celsius) .....-20

Maximum QC Threshold (degree celsius) 20

FP5C

Meteorological Station

Latitude (decimal degrees) 64.71444444

Longitude (decimal degrees) .....-148.14527777

Begin Date..... 1987

Area Description

FP5C is an open stand of black spruce with widely scattered individuals of tamarack (Larix laricina) Total tree canopy is 32%. Tree density in 1989 totaled 2684 trees per hectare of which 2667 were black spruce and 17 were tamarack. Total basal area of the stand is 14.7 m2/ha nearly all of which is black spruce. Average diameter of the dominant black spruce is 15 cm, and heights range from 10 to 15 m but average diameter for all of the black spruce in the stand is only 8 cm. The dominant spruce and tamarack are about 150 years old, but occasional younger trees occur. The tall shrub layer has 21% canopy cover and is primarily of Alnus crispa and Rosa acicularis, with widely scattered Salix glauca, Salix arbusculoides, and Salix planifolia. The low shrub layer is conspicuous with 76% cover; mainly Ledum groenlandicum and Vaccinium vitis-idaea. Common herbs are Equisetum scirpoides, E. arvense, Poa sp. and Calamagrostis canadensis. with a total herbaceous cover of 25%. The nearly continuous moss cover (83%) is dominated by Hylocomium splendens and Pleurozium schreberi. Lichens have 7% cover , primarily Peltigera aphthosa.

Photo URL

http://www.lter.uaf.edu/Site_detail.cfm?site_id=30

Air Temperature

Begin Date 19930811
End Date ..... ongoing
Data Logger Sampling Interval ..... 5 minutes
Summary Interval ..... hourly
Data Accuracy (degree celsius) ..... +/-0.4 C
Instrument Height (meters) ..... 1.5 meters

Instrumentation Description

HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1993-1995. HMP-C Vaisala probe from Campbell Scientific 1995-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present. All Using Fenwell model UUT-51J1 thermistor for sensing temperature.

Methods Description

Omnidata EL-824 Easyloggers 8/11/1993-7/12/1995. Campbell Scientific cr10 micrologger 7/12/1995-present.

Sensor History

HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 8/11/1993-7/12/1995. HMP-C Vaisala probe from Campbell Scientific 7/12/1995-3/18/1998 HMP-35C Vaisala probe from Campbell Scientific 3/18/1998-present

Calibration History

HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 8/11/1993-7/12/1995. HMP-C Vaisala probe from Campbell Scientific 7/12/1995-3/18/1998 HMP-35C Vaisala probe from Campbell Scientific 3/18/1998-present. switched with newly calibrated HMP-35C 5/24/1999. Upgraded to new sensor every 4 years.

Minimum QC Threshold (degree celsius) ..... -55.0
Maximum QC Threshold (degree celsius) 50.0

Relative Humidity

Begin Date 19930811
End Date ..... ongoing
Data Logger Sampling Interval ..... 5 minutes
Summary Interval ..... hourly
Data Accuracy (percent) ..... +/-2% 0 to 90%, +/-3% 90 to 100%humidity
Instrument Height (meters) ..... 1.5 meters

Instrumentation Description

HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1993-1995. HMP-C Vaisala probe from Campbell Scientific 1995-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present.

Methods Description

Omnidata EL-824 Easyloggers 8/11/1993-7/12/1995. Campbell Scientific cr10 micrologger 7/12/1995-present.

Sensor History

HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 8/11/1993-7/12/1995. HMP-C Vaisala probe from Campbell Scientific 7/12/1995-3/18/1998 HMP-35C Vaisala probe from Campbell Scientific 3/18/1998-present

Calibration History

HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 8/11/1993-7/12/1995. HMP-C Vaisala probe from Campbell Scientific 7/12/1995-3/18/1998 HMP-35C Vaisala probe from Campbell Scientific 3/18/1998-present. switched with newly calibrated HMP-35C 5/24/1999. Upgraded to new sensor every 4 years.

Minimum QC Threshold (percent) 10

Maximum QC Threshold (percent) 100

Soil Temperature

Begin Date..... 19930811

End Date..... ongoing

Data Logger Sampling Interval..... hourly

Summary Interval .....hourly

Data Accuracy (degree celsius) ...+/- .4 deg.C in range of -24 deg.C to 48 deg.C, +/-0.9degC. over -38 to 53 deg.C

Instrument Height (meters) .....10 cm below top of mineral soil and O horizon.

Instrumentation Description

Omnidata es-060 soil temperature probe which is a thermistor Fenwall model UUT 51J1 with a 249K precision resistor in a half bridge configuration.

Methods Description

1989 to 1995 Omnidata Easylogger. 1995 to present Campbell Scientific cr10. Compared to YSI (Yellow Springs Instr.) probes in stack adjacent to "logged" stack.

Sensor History

1989 to present. Omnidata es-060 soil temperature probe.

Calibration History

none

Minimum QC Threshold (degree celsius) .....-20
Maximum QC Threshold (degree celsius) 20

HR1A

Meteorological Station

Latitude (decimal degrees) 65.17033333
Longitude (decimal degrees) .....-147.54200000
Elevation (meters; a.m.s.l.) .....Approximately 600 meters
Begin Date..... 1983
History

Precipitation data has been collected at this site since 1983. A sensor for air temperature was added in March 1992. The site was upgraded in June 2001 with the addition of a tipping bucket rain gage. Various problems with the instrumentation have led to some large gaps in the data record. The site must be visited periodically to download the data from a Campbell datalogger.

Photo URL

http://www.lter.uaf.edu/Site_detail.cfm?site_id=16

LTER1

Meteorological Station

Photo URL

http://www.lter.uaf.edu/Intranet/sites_edit.cfm?site_id=52

Air Temperature

Begin Date..... 19880601
End Date..... ongoing
Data Logger Sampling Interval..... 5 minutes
Summary Interval .....hourly
Data Accuracy (degree celsius) .....+/-0.4 C
Instrument Height (meters) .....1.5 meters
Instrumentation Description

ES-110 temperature and relative humidity probe 1988-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1994. HMP-C Vaisala probe from Campbell Scientific 1994-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-2001 HMP-45C Vaisala probe from Campbell Scientific 2001-present. All Using Fenwell model UUT-51J1 thermistor for sensing temperature.

Methods Description

Omnidata EL-824 Easyloggers 1988-1994. Campbell Scientific 21X micrologger 1994-8/29/2000. Campbell Scientific 23X micrologger 8/29/2000-present. Used factory recommended polynomials.

Sensor History

ES-110 temperature and relative humidity probe 6/2/1988-9/5/1990. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/18/1990-6/15/1995. HMP-C Vaisala probe from Campbell Scientific 8/03/1994-4/12/1997 HMP-35C Vaisala probe from Campbell Scientific 4/12/1997-5/29/2001 HMP-45C Vaisala probe from Campbell Scientific 5/29/2001-present

Calibration History

ES-110 temperature and relative humidity probe 6/2/1988-9/18/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/18/1991-6/15/1995. HMP-C Vaisala probe from Campbell Scientific 6/15/1995-4/12/1997 HMP-35C Vaisala probe from Campbell Scientific 4/12/1997-5/29/2001 HMP-45C Vaisala probe from Campbell Scientific 5/29/2001-present Upgraded to new sensor every 4 years.

Minimum QC Threshold (degree celsius) .....-55.0

Maximum QC Threshold (degree celsius) 50.0

Atmospheric Pressure

Begin Date..... 19950602

End Date..... ongoing

Data Logger Sampling Interval..... 5 minutes

Summary Interval .....hourly

Data Accuracy (hectopascals) ..... +/- 0.5 mb @ 20 deg. C

Instrument Height (meters) .....2 meters

Instrumentation Description

Campbell Scientific CS105 probe manufactured by Vaisala. Sensor operating range of 600 mb to 1060 mb using a Barocap silicon capacitive pressure sensor.

Methods Description

Campbell Scientific 21X micrologger 1994-8/29/2000. Campbell Scientific 23X micrologger 8/29/2000-present.

Minimum QC Threshold (hectopascals) 900

Maximum QC Threshold (hectopascals) 1100

Relative Humidity

Begin Date..... 19880601

End Date..... ongoing

Data Logger Sampling Interval..... 5 minutes

Summary Interval .....hourly

Data Accuracy (percent) ..... +/-2% at 0 to 90 %, +/-3 at 90 to 100% humidity

Instrument Height (meters) .....1.5 meters

Instrumentation Description

ES-110 temperature and relative humidity probe 1988-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1994. HMP-C Vaisala probe from Campbell Scientific 1994-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-2001 HMP-45C Vaisala probe from Campbell Scientific 2001-present.

Methods Description

Omnidata EL-824 Easyloggers 1988-1994. Campbell Scientific 21X micrologger 1994-8/29/2000. Campbell Scientific 23X micrologger 8/29/2000-present.

Sensor History

ES-110 temperature and relative humidity probe 6/2/1988-9/5/1990. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/18/1990-6/15/1995. HMP-C Vaisala probe from Campbell Scientific 8/03/1994-4/12/1997 HMP-35C Vaisala probe from Campbell Scientific 4/12/1997-5/29/2001 HMP-45C Vaisala probe from Campbell Scientific 5/29/2001-present

Calibration History

ES-110 temperature and relative humidity probe 6/2/1988-9/18/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/18/1991-6/15/1995. HMP-C Vaisala probe from Campbell Scientific 6/15/1995-4/12/1997 HMP-35C Vaisala probe from Campbell Scientific 4/12/1997-5/29/2001 HMP-45C Vaisala probe from Campbell Scientific 5/29/2001-present Upgraded to new sensor every 4 years.

Maximum QC Threshold (percent) 100

Soil Temperature

Begin Date..... 19880601

End Date..... ongoing

Data Logger Sampling Interval..... hourly

Summary Interval .....hourly

Data Accuracy (degree celsius) ...+/-0.4degC. over the range of -24degC. to 48deg.C or +/-0.9degC over range of -38degC to 53degC

Instrument Height (meters) ..... 10 cm below the mineral / O horizon interface

Instrumentation Description

1988 to 1994 Omnidata es-060 thermistor using a 249K resistor. Fenwell model UUT 51J1. 1994 to present Campbell Scientific 107 probe also using a 249K thermistor.

Methods Description

1988 to 1994 Omnidata Easylogger. 1994 to 1999 Campbell Scientific 21X. 1999 to present Campbell Scientific 23X.

Sensor History

1988 to 1994 Omnidata es-060 thermistor using a 249K resistor. Fenwell model UUT 51J1. 1994 to present Campbell Scientific 107 probe also using a 249K thermistor.

Calibration History

none

Minimum QC Threshold (degree celsius) .....-20

Maximum QC Threshold (degree celsius) 25

LTER2

Meteorological Station

Latitude (decimal degrees) 64.69916666

Longitude (decimal degrees) .....-148.25083333

Begin Date..... 1985

Topography

Flat floodplain

Area Description

LTER2, the second Bonanza Creek Experimental Forest full weather station, was established to monitor the climate of the floodplain region of Bonanza Creek Experimental Forest (BCEF). This site is located adjacent to the Tanana River in BCEF. LTER2 is located on the Tanana River near FP2A, 3 km upriver from the termination of the BCEF Road (at the Gravel Pit) on the north side of the river. It can also be reached by following a 2 km footpath beginning approximately 1 mile before the Gravel Pit on the BCEF Road.

History

Climate at BCEF is monitored at two primary weather stations corresponding to the two geographic regions of the Experimental Forest; one (LTER1) in the upland and

this one on the floodplain (LTER2). LTER2 was established as an experimental plot associated with the NSF funded Salt Affected Soils study in 1985. Brush was cleared, and microclimate was monitoring began. The site became one of the two LTER primary weather stations in the fall of 1987 when BNZ joined the LTER network. Instrumentation installed in June 1988 updated this station to LTER level I standard. An Omnidata logger was installed initially, but replaced by Campbell equipment during 1995 when the BNZ weather station equipment was updated. Following the upgrade, cellular phones were installed at the two weather stations so that data can be downloaded daily by modem.

Photo URL

http://www.lter.uaf.edu/Site_detail.cfm?site_id=53

Air Temperature

Begin Date 19880602

End Date ..... ongoing

Data Logger Sampling Interval ..... scanned every 5 minutes

Summary Interval ..... hourly

Data Accuracy (degree celsius) ..... +/-0.4 degrees C

Instrument Height (meters) ..... 1.5 meters

Instrumentation Description

ES-110 temperature and relative humidity probe 1988-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1994. HMP-C Vaisala probe from Campbell Scientific 1994-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present. All Using Fenwell model UUT-51J1 thermistor for sensing temperature.

Methods Description

Omnidata EL-824 Easyloggers 1988-1994. Campbell Scientific 21X micrologger 1994-present. Used factory recommended polynomials.

Sensor History

ES-110 temperature and relative humidity probe 6/2/1988-9/18/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/18/1991-6/15/1995. HMP-C Vaisala probe from Campbell Scientific 6/15/1995-11/4/1998 HMP-35C Vaisala probe from Campbell Scientific 11/4/1998-present

Calibration History

ES-110 temperature and relative humidity probe 6/2/1988-9/18/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/18/1991-6/15/1995. HMP-C Vaisala probe from Campbell Scientific 6/15/1995-11/4/1998 HMP-35C Vaisala probe from Campbell Scientific 11/4/1998-present Upgraded to new sensor every 4 years.

Minimum QC Threshold (degree celsius) ..... -55.0 C

Maximum QC Threshold (degree celsius) ..... 50.0 C

Relative Humidity

Begin Date..... 19880602

End Date..... ongoing

Data Logger Sampling Interval..... 5 minutes

Summary Interval .....hourly

Data Accuracy (percent) ..... +/-2% 0 to 90%, +/-3% 90 to 100% humidity

Instrument Height (meters) .....1.5 meters

Instrumentation Description

ES-110 temperature and relative humidity probe 1988-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1994. HMP-C Vaisala probe from Campbell Scientific 1994-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present.

Methods Description

Omnidata EL-824 Easyloggers 1988-1994. Campbell Scientific 21X micrologger 1994-present. Used factory recommended polynomials.

Sensor History

ES-110 temperature and relative humidity probe 6/2/1988-9/18/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/18/1991-6/15/1995. HMP-C Vaisala probe from Campbell Scientific 6/15/1995-11/4/1998 HMP-35C Vaisala probe from Campbell Scientific 11/4/1998-present

Calibration History

ES-110 temperature and relative humidity probe 6/2/1988-9/18/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/18/1991-6/15/1995. HMP-C Vaisala probe from Campbell Scientific 6/15/1995-11/4/1998 HMP-35C Vaisala probe from Campbell Scientific 11/4/1998-present Upgraded to new sensor every 4 years.

Maximum QC Threshold (percent) 100

Soil Temperature

Begin Date..... 19880602

End Date..... ongoing

Data Logger Sampling Interval..... hourly

Summary Interval .....hourly

Data Accuracy (degree celsius) ...+/- .4 deg.C in range of -24 deg.C to 48 deg.C, +/-0.9degC. over -38 to 53 deg.C

Instrument Height (meters) .....-10 cm below top of mineral soil and O horizon.

Instrumentation Description

Omnidata es-060 probe 1988-1994. Omnidata es-060 soil temperature probe which is a thermistor Fenwall model UUT 51J1 with a 249K precision resistor in a half bridge configuration. campbell scientific 107 probe 1994 to present. (Also a 249K resistor)

Methods Description

data collected with the omnidata easylogger 1988 to 1994. Campbell Scientific 21x ,1994-present. YSI (yellow springs instrument) probe at the same depth was read manually weekly to use as a comparison. Data graphed and compared to other sites.

Sensor History

july 1994 the sensors were upgraded to campbell scientific 107 probes. The new stack was located adjacent to the old stack. Old stack of es-060 probes were maintained until we were satisfied that the new stack was tracking in the same way the old stack was. When the old easylogger became inoperable the old stack was removed.

Calibration History

1988-1994 es-060 probe 1994-present campbell 107 probe.

Minimum QC Threshold (degree celsius) .....-20

Maximum QC Threshold (degree celsius) 20

UP1A

Meteorological Station

Latitude (decimal degrees) 64.73611111

Longitude (decimal degrees) .....-148.30027777

Area Description

The 1983 Rosie Creek fire occurred in late May and early June. By September of that year, herbaceous cover was 31% and dominated by Geranium bicknellii and Epilobium angustifolium. Shrub sprouts covered an additional 2.5%. The following year the herbaceous cover totaled 80% and was dominated by Equisetum arvense, Geranium bicknellii, Epilobium angustifloium, Dracocephalum parviflorum, and Corydalis sempivirens. Shrub cover was 2% and tree cover less than 1%. In 1988, 5 years after the fire the herbaceous cover had reached 94% and was dominated by Equisetum arvense, Epilobium angustifolium, and Calamagrostis canadensis. Shrub cover, primarily Rubus idaeus, Rosa acicularis and Viburnum edule, was 12%. A few scattered individuals of Betula papyrifera, and Populus tremuloides had a total cover in the stand of only 1%. By 1995, 12 years after the fire, total herb cover had been reduced to 50% and was still dominated by Equisetum arvense, Epilobium angustifoium and Calamagrostis canadensis but Pyrola secunda had developed 4%

cover. Some of the herbaceous cover was replaced by mosses, primarily Polytrichum juniperinum. Low shrubs, primarily Linnaea borealis, had 20% cover and the same species of tall shrubs, had only 8% cover. Tree cover had increased to 12%. Picea glauca seedlings in 1995 had reached heights of 60 cm and had a density of 1000/ha. Total tree numbers of Betula papyrifera, Populus tremuloides and P. balsamifera were only 300/ha but a large number of saplings (nearly 10,000/ha) of the deciduous species will reach tree size (2.5 cm DBH) in the next few years. The original stand had 450 white spruce trees/ha with a basal area of 35m2/ha. These trees were all killed by the fire but most remained standing. By 1997 the standing dead trees had been reduced to 67/ha with a basal area of 3.4 m2/ha.

Photo URL

http://www.lter.uaf.edu/Site_detail.cfm?site_id=32

Air Temperature

Begin Date 19890511

End Date ..... ongoing

Data Logger Sampling Interval ..... 5 minutes

Summary Interval ..... hourly

Data Accuracy (degree celsius) ..... +/-0.4 C

Instrument Height (meters) ..... 1.5 meters

Instrumentation Description

ES-110 temperature and relative humidity probe 1989-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1994. HMP-C Vaisala probe from Campbell Scientific 1995-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present. All Using Fenwell model UUT-51J1 thermistor for sensing temperature.

Methods Description

Omnidata EL-824 Easyloggers 1988-1995. Campbell Scientific cr10 micrologger 6/6/1995-present.

Sensor History

ES-110 temperature and relative humidity probe 5/11/1989-9/19/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/19/1991-6/6/1995. HMP-C Vaisala probe from Campbell Scientific 6/6/1995-4/17/1999 HMP-35C Vaisala probe from Campbell Scientific 4/17/1999-present

Calibration History

ES-110 temperature and relative humidity probe 5/11/1989-9/19/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/19/1991-6/6/1995. HMP-C Vaisala probe from Campbell Scientific 6/6/1995-4/17/1999 HMP-35C Vaisala probe from Campbell Scientific 4/17/1999-present Upgraded to new sensor every 4 years.

Minimum QC Threshold (degree celsius) .....-55.0
Maximum QC Threshold (degree celsius) 50.0

Relative Humidity

Begin Date..... 19890511
End Date..... ongoing
Data Logger Sampling Interval..... 5 minutes
Summary Interval .....hourly
Data Accuracy (percent) .....+/-2% 0 to 90%, +/-3% 90 to 100%humidity
Instrument Height (meters) .....1.5 meters
Instrumentation Description

ES-110 temperature and relative humidity probe 1989-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1994. HMP-C Vaisala probe from Campbell Scientific 1995-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present.

Methods Description

Omnidata EL-824 Easyloggers 1988-1995. Campbell Scientific cr10 micrologger 6/6/1995-present.

Sensor History

ES-110 temperature and relative humidity probe 5/11/1989-9/19/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/19/1991-6/6/1995. HMP-C Vaisala probe from Campbell Scientific 6/6/1995-4/17/1999 HMP-35C Vaisala probe from Campbell Scientific 4/17/1999-present

Calibration History

ES-110 temperature and relative humidity probe 5/11/1989-9/19/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/19/1991-6/6/1995. HMP-C Vaisala probe from Campbell Scientific 6/6/1995-4/17/1999 HMP-35C Vaisala probe from Campbell Scientific 4/17/1999-present Upgraded to new sensor every 4 years.

Minimum QC Threshold (percent) 10
Maximum QC Threshold (percent) 100

Soil Temperature

Begin Date..... 19890511
End Date..... ongoing
Data Logger Sampling Interval..... hourly
Summary Interval .....hourly
Data Accuracy (degree celsius) ...+/- .4 deg.C in range of -24 deg.C to 48 deg.C,

+/-0.9degC. over -38 to 53 deg.C

Instrument Height (meters) .....10 cm below top of mineral soil and O horizon.

Instrumentation Description

Omnidata es-060 soil temperature probe which is a thermistor Fenwall model UUT 51J1 with a 249K precision resistor in a half bridge configuration. Campbell Scientific 107 probe. Also a 249K thermistor.

Methods Description

1989 to 1995 Omnidata Easylogger. 1995 to present Campbell Scientific cr10. Compared to YSI (Yellow Springs Instr.) probes in stack adjacent to "logged" stack.

Sensor History

1989 to 8/24/2002 Omnidata es-060 probe. 8/24/2002 to present ,Campbell Scientific 107 probe.

Calibration History

none

Minimum QC Threshold (degree celsius) .....-20

Maximum QC Threshold (degree celsius) 25

UP2A

Meteorological Station

Latitude (decimal degrees) 64.69527777

Longitude (decimal degrees) .....-148.35638888

Area Description

This dense mixed stand of white spruce, paper birch, balsam poplar, and aspen originated following a wildfire between 1910 and 1915. The deciduous species dominate the tree canopy but white spruce is beginning to replace the deciduous species as succession proceeds. Present (1993) density per hectare of trees is 1675 for paper birch, 1492 for white spruce, 192 for balsam poplar and 17 for aspen: corresponding basal area for the four species is 18.5, 7.1, 4.4, and 0.6 m2/ha for a stand total of 30.6 m2/ha. Dominant tree heights of all four species are between 15 and 22 meters(average 18m). Because of the dense tree canopy cover (85%) and the heavy leaf litter, shrub and herb cover is relatively low. Herbs and low shrubs, primarily Linnaea borealis, Equisetum arvense and Calamagrostis canadensis, have a total cover of 23%. There is also a 20% cover of Rosa acicularis and Viburnum edule. Moss cover is less than 10% because of the heavy leaf litter deposition.

Photo URL

http://www.lter.uaf.edu/Site_detail.cfm?site_id=35

Air Temperature

Begin Date 19880603
End Date ..... ongoing
Data Logger Sampling Interval ..... 5 minutes
Summary Interval ..... hourly
Data Accuracy (degree celsius) ..... +/-0.4 C
Instrument Height (meters) ..... 1.5 meters

Instrumentation Description

ES-110 temperature and relative humidity probe 1988-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1995. HMP-C Vaisala probe from Campbell Scientific 1995-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present. All Using Fenwell model UUT-51J1 thermistor for sensing temperature.

Methods Description

Omnidata EL-824 Easyloggers 1988-1995. Campbell Scientific cr10 micrologger 6/6/1995-present.

Sensor History

ES-110 temperature and relative humidity probe 6/3/1988-9/19/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/19/1991-6/6/1995. HMP-C Vaisala probe from Campbell Scientific 6/6/1995-9/13/1998 HMP-35C Vaisala probe from Campbell Scientific 9/13/1998-present.

Calibration History

ES-110 temperature and relative humidity probe 6/2/1988-7/17/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 7/17/1991-6/15/1995. HMP-C Vaisala probe from Campbell Scientific 6/15/1995-8/13/1996 8/13/1996 switched with calibrated HMP-C Vaisala. HMP-35C Vaisala probe from Campbell Scientific 5/14/1998-present Upgraded to new sensor every 4 years.

Minimum QC Threshold (degree celsius) ..... -55.0
Maximum QC Threshold (degree celsius) 50.0

Relative Humidity

Begin Date 19880603
End Date ..... ongoing
Data Logger Sampling Interval ..... 5 minutes
Summary Interval ..... hourly
Data Accuracy (percent) ..... +/-2% 0 to 90%, +/-3% 90 to 100%humidity

Instrument Height (meters) .....1.5 meters

Instrumentation Description

ES-110 temperature and relative humidity probe 1988-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1995. HMP-C Vaisala probe from Campbell Scientific 1995-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present.

Methods Description

Omnidata EL-824 Easyloggers 1988-1995. Campbell Scientific cr10 micrologger 6/6/1995-present.

Sensor History

ES-110 temperature and relative humidity probe 6/3/1988-9/19/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/19/1991-6/6/1995. HMP-C Vaisala probe from Campbell Scientific 6/6/1995-9/13/1998 HMP-35C Vaisala probe from Campbell Scientific 9/13/1998-present.

Calibration History

ES-110 temperature and relative humidity probe 6/2/1988-7/17/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 7/17/1991-6/15/1995. HMP-C Vaisala probe from Campbell Scientific 6/15/1995-8/13/1996 8/13/1996 switched with calibrated HMP-C Vaisala. HMP-35C Vaisala probe from Campbell Scientific 5/14/1998-present

Minimum QC Threshold (percent) 10

Maximum QC Threshold (percent) 100

Soil Temperature

Begin Date..... 19880603

End Date..... ongoing

Data Logger Sampling Interval..... hourly

Summary Interval .....hourly

Data Accuracy (degree celsius) ...+/- .4 deg.C in range of -24 deg.C to 48 deg.C, +/-0.9degC. over -38 to 53 deg.C

Instrument Height (meters) .....10 cm below top of mineral soil and O horizon.

Instrumentation Description

Omnidata es-060 soil temperature probe which is a thermistor Fenwall model UUT 51J1 with a 249K precision resistor in a half bridge configuration. Campbell Scientific 107 probe, also a 249K thermistor.

Methods Description

1988 to 1995 Omnidata Easylogger. 1995 to present Campbell Scientific cr10. Compared to YSI (Yellow Springs Instr.) probes in stack adjacent to "logged" stack.

Sensor History

1988 to 1998 Omnidata es-060 soil temperature probe. 7/16/1998 to present, campbell scientific 107 probe.

Calibration History

none

Minimum QC Threshold (degree celsius) .....-20

Maximum QC Threshold (degree celsius) 20

UP3A

Meteorological Station

Latitude (decimal degrees) 64.76805555

Longitude (decimal degrees) .....-148.27666666

Area Description

This mature white spruce stand originated in approximately 1780 as a result of wildfire. Picea glauca is the dominant tree but occasional Betula papyrifera and Populus tremuloides persist beneath the spruce canopy. Diameters of the dominant spruce range from 35 to 45 cm, and heights average 25 m with some individuals of 36 m. Spruce tree density in 1993 was 493/ha with a basal area of 32 m2/ha. Scattered shrubs of Alnus crispa and Viburnum edule make up less than 1% cover. Herbaceous cover is also low and consists primarily of Calamagrostis canadensis, Geocaulon lividum, and Pyrola secunda. The forest floor is covered by a moss mat of Hylocomium splendens.

Photo URL

http://www.lter.uaf.edu/Site_detail.cfm?site_id=38

Air Temperature

Begin Date..... 19890518

End Date..... ongoing

Data Logger Sampling Interval..... 5 minutes

Summary Interval .....hourly

Data Accuracy (degree celsius) .....+/-0.4 C

Instrument Height (meters) .....1.5 meters

Instrumentation Description

ES-110 temperature and relative humidity probe 1988-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1994. HMP-C Vaisala probe from Campbell Scientific 1995-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present. All Using Fenwell model UUT-51J1 thermistor for sens-

ing temperature.

Methods Description

Omnidata EL-824 Easyloggers 1988-1995. Campbell Scientific cr10 micrologger 6/13/1995-present.

Sensor History

ES-110 temperature and relative humidity probe 6/2/1988-9/19/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/19/1991-6/13/1995. HMP-C Vaisala probe from Campbell Scientific 6/13/1995-9/14/1998 HMP-35C Vaisala probe from Campbell Scientific 9/14/1998-present

Calibration History

ES-110 temperature and relative humidity probe 6/2/1988-3/20/1990. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 3/20/1990-6/13/1995. HMP-C Vaisala probe from Campbell Scientific 6/13/1995-9/14/1998 HMP-35C Vaisala probe from Campbell Scientific 9/14/1998-present Switched with calibrated HMP-35C Vaisala probe 5/15/2001 Upgraded to new sensor every 4 years.

Minimum QC Threshold (degree celsius) .....-55.0

Maximum QC Threshold (degree celsius) 50.0

Relative Humidity

Begin Date..... 19890518

End Date..... ongoing

Data Logger Sampling Interval..... 5 minutes

Summary Interval .....hourly

Data Accuracy (percent) .....+/-2% 0 to 90%, +/-3% 90 to 100%humidity

Instrument Height (meters) .....1.5 meters

Instrumentation Description

ES-110 temperature and relative humidity probe 1988-1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 1991-1994. HMP-C Vaisala probe from Campbell Scientific 1995-1998. HMP-35C Vaisala probe from Campbell Scientific 1998-present.

Methods Description

Omnidata EL-824 Easyloggers 1988-1995. Campbell Scientific cr10 micrologger 6/13/1995-present.

Sensor History

ES-110 temperature and relative humidity probe 6/2/1988-9/19/1991. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 9/19/1991-6/13/1995. HMP-C Vaisala probe from Campbell Scientific 6/13/1995-9/14/1998 HMP-35C Vaisala probe from Campbell Scientific

9/14/1998-present

Calibration History

ES-110 temperature and relative humidity probe 6/2/1988-3/20/1990. HMP Vaisala air temp and relative humidity probe (aka ES120 omnidata probe) 3/20/1990-6/13/1995. HMP-C Vaisala probe from Campbell Scientific 6/13/1995-9/14/1998 HMP-35C Vaisala probe from Campbell Scientific 9/14/1998-present Switched with calibrated HMP-35C Vaisala probe 5/15/2001

Minimum QC Threshold (percent) 10

Maximum QC Threshold (percent) 100

Soil Temperature

Begin Date..... 19890524

End Date..... ongoing

Data Logger Sampling Interval..... hourly

Summary Interval .....hourly

Data Accuracy (degree celsius) ...+/- .4 deg.C in range of -24 deg.C to 48 deg.C, +/-0.9degC. over -38 to 53 deg.C

Instrument Height (meters) .....10 cm below top of mineral soil and O horizon.

Instrumentation Description

Omnidata es-060 soil temperature probe which is a thermistor Fenwall model UUT 51J1 with a 249K precision resistor in a half bridge configuration.

Methods Description

1989 to 1995 Omnidata Easylogger. 1995 to present Campbell Scientific cr10. Compared to YSI (Yellow Springs Instr.) probes in stack adjacent to "logged" stack.

Sensor History

1989 to 6/27/2002. Omnidata es-060 soil temperature probe. 6/27/2002 to present Campbell Scientifc 107 probe.

Calibration History

none

Minimum QC Threshold (degree celsius) .....-20

Maximum QC Threshold (degree celsius) 20

Watershed

Gauging Stations

Caribou Watershed 2 stream gauge

Stream Discharge

Begin Date..... 7/8/1998
End Date..... Present
Data Logger Sampling Interval..... 1 minute
Summary Interval .....15 minute
Data Accuracy (liters per second) .....+/- 10 lps
Instrumentation Description

Parshall flume with Campbell datalogger and pressure transducer

Calibration History

Stream flow measured manually every ~2 weeks

Caribou Watershed 3 stream gauge

Stream Discharge

Begin Date..... 4/23/2001
End Date..... Present
Data Logger Sampling Interval..... 1 minute
Summary Interval .....15 minute
Data Accuracy (liters per second) .....+/- 10 lps
Instrumentation Description

Parshall flume with Campbell datalogger and pressure transducer

Calibration History

Stream flow measured manually every ~2 weeks

Caribou Watershed 4 stream gauge

Stream Discharge

Begin Date..... 5/21/1998

End Date ..... Present
Data Logger Sampling Interval ..... 1 minute
Summary Interval ..... 15 minute
Data Accuracy (liters per second) ..... +/- 10 lps
Instrumentation Description

Parshall flume with Campbell datalogger and pressure transducer

Calibration History

Stream flow measured manually every ~2 weeks