

Marcell Experimental Forest Metadata Report (MAR)

St. Paul, Minnesota

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Research Area Information

Marcell Experimental Forest.....MAR

Marcell Experimental Forest

Research Area Information

Harvest URL -Option 2

<ftp://ftp2.fs.fed.us/incoming/nrs/fia/Rugg/hydrodb/mefhydro.txt>

Site URL

<http://nrs.fs.fed.us/ef/marcell/>

Experimental Design

Climate and hydrologic data have been collected from up to 7 watersheds in and adjacent to the Marcell Experimental Forest since 1961. TEMPERATURE: Air temperatures are measured at 3 locations: the South Unit Upland (NW side of watershed S2); South Unit Bog (Bog in watershed S2); North Unit Upland (NE side of watershed S5). Each site is equipped with a Belfort model 594-1 hygrothermograph and a US Weather Bureau style max/min thermometer, which are housed in Standard NWS Shelters. Missing chart values are estimated from the max/min thermometer readings. Daily max/min temperatures are estimated from the charts to the nearest degree F and entered by hand. Data collection has been continuous since 1961 from the S2 Upland site, since 1962 from the S5 Upland site, and since 1989 from the S2 Bog site. PRECIPITATION: Each watershed in the MEF has at least 2 8" Standard USWB Precipitation Gauges. Three sites are also equipped with Belfort Universal Recording Precipitation Gauges. They are supported on 2-ft diam wooden platforms that hold the gauge tops 5-ft above the ground. Gauges are re-levelled annually to correct for frost-heaving. Gauges at non-wooded sites are protected with USWB Alter-Type Windshields, and all gauges are cleaned, lubricated and re-calibrated annually. Precipitation data are collected on a weekly basis. Rainfall is measured to the nearest 0.01" in the receiving tube, while snowfall is measured gravimetrically in gauges charged with antifreeze and oil to reduce evaporation. The daily values provided are obtained only from 2 of the sites equipped with recording gauges (S2-Upland and S5-Upland). Daily values are transcribed by hand from the recorder charts. Weighted values are estimated for each watershed using the Thiessen Polygon Method. Data are continuous from 1961 for watershed S2 and from 1962 for watershed S5. STREAM DISCHARGE: Runoff from calibrated watersheds is currently measured at 5 location on the MEF: S2, S4-North, S4-South, S-5 and S6. Each watershed has a single channel outlet except for S4, which has two. Flow is monitored with 120-degree V-Notch Weir Blades attached to concrete cutoff walls, which are perpendicular to the channels and long enough to force all flow through the weirs. S-2 Weir is equipped with a Stevens Type A-35 strip chart recorder, while all other weirs have Belfort FW-1 strip chart recorders. The recorders are mounted above the float wells in ponds behind each weir and housed in plywood shelters. Float and pulley systems are used to monitor water depth in each weir notch. Chart readings are adjusted to match weekly aluminum point gauge

readings. Point gauge and weir notch elevations are verified annually against a known benchmark. All recorders are cleaned and lubricated at least annually. Missing flow values are estimated from precipitation and bog well records as well as run-off data from neighboring watersheds. Peak flows in these watersheds is generally less than 57 Lps; positive flows usually start in late March with snowmelt and continue through early winter. Plywood covers over the weirs help prevent freezing during transitional periods. Depth values in the weirs are calculated from the recorder charts using Sigma Scan and a SummaSketch III Professional digitizing pad to create data files, which are processed with a MS Visual Basic script to calculate mean daily flow rates. Data are continuous from 1961 for S-2 Weir, from 1962 for S-4 and S-5 Weirs, and from 1964 (missing 1973, 1976) for S-6 Weir.

USGS Harvest URL

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

Meteorological Stations

South Unit, Bog Site, Watershed S2	S2-BOG-MS
South Unit, Upland, Watershed S2	S2-UP-MS
North Unit, Upland, Watershed S5	S5-UP-MS

South Unit, Bog Site, Watershed S2

Meteorological Station

Latitude (decimal degrees)47.51402
Longitude (decimal degrees)-93.4692
Elevation (meters; a.m.s.l.)422.2
Exposure (degrees)90
Wind Exposure (degrees azimuth)90
Begin Date..... 1989
End Date..... Present

Topography

In a Bog

Surface

Sphagnum Moss

Area Description

Station is in a Black Spruce Bog.

History

The station has been in the same location since establishment in 1989. It is in a 140yr old Black Spruce Stand. There are no buildings or heat sources within 1/2 mile of site.

Air Temperature

Minimum QC Threshold (degree celsius)-50
Maximum QC Threshold (degree celsius)50

South Unit, Upland, Watershed S2

Meteorological Station

Latitude (decimal degrees)47.51523
Longitude (decimal degrees)-93.47077
Elevation (meters; a.m.s.l.)426
Exposure (degrees)45

Wind Exposure (degrees azimuth)45

Begin Date..... 1961

End Date..... Present

Topography

On 3 degree South facing slope

Surface

grass

Area Description

The area adjacent to the opening is an Aspen stand with trees about 70" tall.

History

When the station was established in 1961 , a 150" diameter opening was cleared in a mature Aspen stand. The station has not been moved since establishment. There are no buildings or heat sources within 1/2 mile of the site. Over the years a few trees have been cut near the edge of opening to maintain the clear 45 degree opening from the top of gauges.

Photo URL

http://www.ncrs.fs.fed.us/ef/marcell/generalinfo_pages/instrumentation_pages/recording_raingauge.htm and
http://www.ncrs.fs.fed.us/ef/marcell/generalinfo_pages/instrumentation_pages/air_temp.htm

North Unit, Upland, Watershed S5

Meteorological Station

Latitude (decimal degrees)47.56507

Longitude (decimal degrees)-93.47678

Elevation (meters; a.m.s.l.)433

Exposure (degrees)45

Wind Exposure (degrees azimuth)45

Begin Date..... 1962

End Date..... Present

Topography

The station is in a flat opening.

Surface

Grass

Area Description

The station is in a 150" diameter opening in a mature Aspen stand. There are no nearby structures.

History

The record has been continuous and the station has not moved since establishment in 1962. A few trees have been cut near the opening edge to maintain the 45 degree opening above the gauges.

Watershed

South Unit Watershed S2.....	S2
North Unit Watershed S4	S4
North Unit Watershed S5	S5
Watershed S6.....	S6

South Unit Watershed S2

Watershed Spatial Characteristics

North bounding coordinate (decimal degrees)	47.515518
West bounding coordinate (decimal degrees)	-93.472223
South bounding coordinate (decimal degrees)	47.512366
East bounding coordinate (decimal degrees)	-93.466719
Area (hectares)	9.7
Aspect (degrees azimuth)	280
Minimum watershed elevation (meters; a.m.s.l)	422
Maximum watershed elevation (meters; a.m.s.l)	433

Watershed Ecological Characteristics

Mean annual precipitation (millimeters)	781
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Watershed Descriptions

Pre-treatment vegetation

Mature black spruce bog (3.2 ha) and 6.5 ha upland dominated by mature trembling aspen (*Populus tremuloides*) and paper birch (*Betula papyrifera*).

Soil description

Soils are dominated by the Loxly series (Typic Borosaprist) in the bog and the Warba series (Glossic Eutroboralf) in the upland.

Treatment History

This watershed has been used as a control for logging, fertilization and grazing studies conducted in neighboring watersheds. It has also been used by various groups to study nutrient cycling, vegetation community dynamics, trace gas fluxes and hydrologic processes.

North Unit Watershed S4

Watershed Spatial Characteristics

North bounding coordinate (decimal degrees)	47.564455
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West bounding coordinate (decimal degrees)	-93.490804
South bounding coordinate (decimal degrees)	47.556218
East bounding coordinate (decimal degrees)	-93.478798
Area (hectares)	34
Aspect (degrees azimuth)	300
Minimum watershed elevation (meters; a.m.s.l.)	428
Maximum watershed elevation (meters; a.m.s.l.)	438

Watershed Descriptions

Pre-treatment vegetation

Vegetation in the 8.1 ha wetland area is dominated by mature black spruce (*Picea mariana*), while the 25.9 ha upland is dominated by aspen (*Populus tremuloides*) and paper birch (*Betula papyrifera*).

Soil description

Soils in S4 are dominated by the Greenwood Peat series (Typic Borohemist) in the bog areas and the Nashwauk-Menagha complex, including Nashwauk fine sandy loams (Typic Glossoboralf), in the uplands.

Geology description

The S4 watershed is located on a drainage divide: 69% of the drainage flows into the Rainy River basin and ultimately into Hudson Bay, while 31% flows into the Mississippi River basin and south to the Gulf of Mexico.

Treatment History

The upland aspen-birch stands were cut in 1971 and allowed to regenerate naturally to assess the effects of upland harvesting on watershed water yields.

North Unit Watershed S5

Watershed Spatial Characteristics

North bounding coordinate (decimal degrees)	47.566636
West bounding coordinate (decimal degrees)	-93.483198
South bounding coordinate (decimal degrees)	47.558561
East bounding coordinate (decimal degrees)	-93.471218
Area (hectares)	52.6
Aspect (degrees azimuth)	45
Minimum watershed elevation (meters; a.m.s.l.)	423
Maximum watershed elevation (meters; a.m.s.l.)	438

Watershed Descriptions

Pre-treatment vegetation

Vegetation in S5 consists of 6.1 ha of mature black spruce (*Picea mariana*) in the wetland and 46.5 ha of mature aspen (*Populus tremuloides*), paper birch (*Betula papyrifera*) and balsam fir (*Abies balsamifera*) in the upland.

Soil description

Wetland soils in S5 are dominated by Moosewood-Lupton mucky peats (Typic Borosaprist and Typic Borohemist), while upland soils are dominated by the Menagha-Nashwauk complex (Typic Udipsamment and Typic Glossoboralf).

Treatment History

S5 was used as a control watershed for a harvesting study in S4.

Watershed S6

Watershed Spatial Characteristics

North bounding coordinate (decimal degrees)	47.522302
West bounding coordinate (decimal degrees)	-93.473939
South bounding coordinate (decimal degrees)	47.518907
East bounding coordinate (decimal degrees)	-93.469196
Area (hectares)	8.9
Aspect (degrees azimuth)	130
Minimum watershed elevation (meters; a.m.s.l.)	422
Maximum watershed elevation (meters; a.m.s.l.)	433

Watershed Descriptions

Pre-treatment vegetation

The wetland area of S6 is a long, narrow, 2 ha poor fen dominated by mature black spruce (*Picea mariana*) and tamarack (*Larix laricina*). The 6.9 ha upland was dominated by quaking aspen (*Populus tremuloides*) prior to conversion to white spruce (*Picea glauca*) and red pine (*Pinus resinosa*).

Soil description

Soils in the fen consist of an unnamed Typic Borosaprist, while the upland is dominated by the Menagha series (Typic Udipsamment).

Treatment History

The aspen in the upland portion of the watershed was harvested in 1980 to allow

conversion to red pine and white spruce, during trials comparing cattle grazing and herbicide treatments.

Gauging Stations

Total runoff of South Unit Watershed S2 weir	S2-ALL
Bog runoff component of South Unit Watershed S2 weir	S2-BOG
Upland runoff component of South Unit Watershed S2 weir	S2-UP
Total runoff of North Unit Watershed S4 weirs (sum of S4-N and S4-S weirs)	S4-ALL
Bog runoff component of North Unit Watershed S4 weirs (sum of S4-N and S4-S weirs)	S4-BOG
Upland runoff component of North Unit Watershed S4 weirs (sum of S4-N and S4-S weirs)	S4-UP
Total runoff of North Unit Watershed S5 weir	S5-ALL
Bog runoff component of North Unit Watershed S5 weir	S5-BOG
Upland runoff component of North Unit Watershed S5 weir	S5-UP
Total runoff Watershed S6 weir	S6-ALL
Bog runoff component of Watershed S6 weir	S6-BOG
Upland runoff component of Watershed S6 weir	S6-UP

Total runoff of South Unit Watershed S2 weir

Hydrologic Gauging Station

Latitude (decimal degrees)47.51402
Longitude (decimal degrees)-93.47250
Elevation (meters; a.m.s.l.)420.13
Begin Date..... 1961
End Date Present
Watershed Area (hectares)9.7

Associated Watershed

S-2

Associated meteorological station

Precipitation: S2_UP; Air temperature: S2_UP.

Photo URL

www.ncrs.fs.fed.us/EF/Marcell/generalinfo_pages/weir.htm

History

Data have been collected continuously from S2 weir since 1961. Positive flows usually begin in late March with snowmelt and continue through early winter. Recorder chart readings are adjusted to match weekly aluminum point gauge readings. Point gauge and weir notch elevations are verified annually against a known benchmark. All recorders are cleaned and lubricated at least annually. Depth values in the weirs are calculated from the recorder charts using Sigma Scan and a SummaSketch III Professional digitizing pad to create data files, which are processed with a MS Visual Basic script to calculate mean daily flow rates.

Weir Description

Flow is monitored with a 120-degree V-Notch Weir Blade attached to concrete cutoff walls, which are perpendicular to the channels and long enough to force all flow through the weirs. S-2 Weir is equipped with a Stevens Type A-35 strip chart recorder. The recorder is mounted above the float wells in ponds behind the weir and housed in a plywood shelter. A float and pulley system is used to monitor water depth in the weir notch. Chart readings are adjusted to match weekly aluminum point gauge readings. Point gauge and weir notch elevations are verified annually against a known benchmark. The recorder is cleaned and lubricated at least annually. A plywood cover over the weir helps prevent freezing during transitional periods.

Stream Discharge

Summary Interval Daily
Data Accuracy (liters per second) +/- 5%
Maximum QC Threshold (liters per second) 57.6

Bog runoff component of South Unit Watershed S2 weir

Hydrologic Gauging Station

Air Temperature

Begin Date..... 1989
Data Accuracy (degree celsius) 0.5 deg C

Instrumentation Description

Air temperatures are recorded with a Belfort model 594-1 hygrothermograph and a US Weather Bureau style max/min thermometer, which are housed in a Standard NWS Shelter.

Methods Description

Missing chart values are estimated from the max/min thermometer readings. Daily max/min temperatures are estimated from the charts to the nearest degree F and entered by hand.

Minimum QC Threshold (degree celsius) -45.60
Maximum QC Threshold (degree celsius) 35.60

Stream Discharge

Upland runoff component of South Unit Watershed S2 weir

Air Temperature

Begin Date..... 1961

Summary Interval Daily

Data Accuracy (degree celsius) 0.5 deg C

Instrumentation Description

Air temperatures are recorded with a Belfort model 594-1 hygrothermograph and a US Weather Bureau style max/min thermometer, which are housed in a Standard NWS Shelter.

Methods Description

Missing hygrothermograph chart values are estimated from the max/min thermometer readings. Daily max/min temperatures are estimated from the charts to the nearest degree F and entered by hand.

Minimum QC Threshold (degree celsius) -45.60

Maximum QC Threshold (degree celsius) 37.80

Precipitation

Begin Date..... 1961

Summary Interval Daily

Data Accuracy (millimeters) +/-0.2mm

Instrument Height (meters) 1.52

Instrumentation Description

Each watershed in the MEF has at least 2 8" Standard USWB Precipitation Gauges. The S2 station is also equipped with a Belfort Universal Recording Precipitation Gauge. They are supported on 2-ft diam wooden platforms that hold the gauge tops 5-ft above the ground. Gauges at non-wooded sites are protected with USWB Alter-Type Windshields, and all gauges are cleaned, lubricated and re-calibrated annually. Gauges are re-levelled annually to correct for frost-heaving.

Methods Description

Precipitation data are collected on a weekly basis. Rainfall is measured to the nearest 0.01" in the receiving tube, while snowfall is measured gravimetrically in gauges charged with antifreeze and oil to reduce evaporation. Daily precipitation values are obtained only from the recording gauge. Daily values are transcribed by hand from the recorder charts. Weighted values are estimated for each watershed using the Thiessen Polygon Method.

Maximum QC Threshold (millimeters) 111.3

**Total runoff of North Unit Watershed S4
weirs (sum of S4-N and S4-S weirs)**

Hydrologic Gauging Station

Latitude (decimal degrees)47.56270,47.55805
Longitude (decimal degrees) -93.48707,-93.48258
Begin Date..... 1962
End Date Present
Watershed Area (hectares)34
Associated Watershed

S4

Associated meteorological station

Precip and temperature: S5_UP.

History

Depth values in the weirs are calculated from the recorder charts using Sigma Scan and a SummaSketch III Professional digitizing pad to create data files, which are processed with a MS Visual Basic script to calculate mean daily flow rates. Chart readings are adjusted to match weekly aluminum point gauge readings. Point gauge and weir notch elevations are verified annually against a known benchmark. All recorders are cleaned and lubricated at least annually. Missing flow values are estimated from precipitation and bog well records as well as runoff data from neighboring watersheds.

Weir Description

Flow from the S4 watershed is the sum of measured flow from two weirs, located at the north and south ends of the watershed, respectively. Flow at each location is monitored with a 120-degree V-Notch Weir Blade attached to concrete cutoff walls, which are perpendicular to the channel and long enough to force all flow through the weir. Belfort FW-1 strip chart recorders are mounted above the float wells in pond behind the weirs and housed in plywood shelters. Float and pulley systems are used to monitor water depth in the weir notch. Chart readings are adjusted to match weekly aluminum point gauge readings. Point gauge and weir notch elevations are verified annually against a known benchmark. All recorders are cleaned and lubricated at least annually. Plywood covers over the weirs help prevent freezing during transitional periods.

Stream Discharge

Summary IntervalDaily
Data Accuracy (liters per second) +/- 5%
Maximum QC Threshold (liters per second)238.5

Total runoff of North Unit Watershed S5
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weir

Hydrologic Gauging Station

Latitude (decimal degrees)47.56427
Longitude (decimal degrees)-93.47272
Begin Date..... 1962
Watershed Area (hectares)52.6
Associated Watershed

S5

Associated meteorological station

Precipitation: S5_UP; Temperature: S5_UP.

History

Data have been collected continuously from S5 since 1962. Depth values in the weirs are calculated from the recorder charts using Sigma Scan and a SummaSketch III Professional digitizing pad to create data files, which are processed with a MS Visual Basic script to calculate mean daily flow rates. Chart readings are adjusted to match weekly aluminum point gauge readings. Point gauge and weir notch elevations are verified annually against a known benchmark. Missing flow values are estimated from precipitation and bog well records as well as runoff data from neighboring watersheds.

Weir Description

Flow is monitored with a 120-degree V-Notch Weir Blade attached to concrete cutoff walls, which are perpendicular to the channel and long enough to force all flow through the weir. S5 weir has a Belfort FW-1 strip chart recorder, which is mounted above the float well in a pond behind the weir and housed in a plywood shelter. A float and pulley systems is used to monitor water depth in the weir notch. Chart readings are adjusted to match weekly aluminum point gauge readings. Point gauge and weir notch elevations are verified annually against a known benchmark. All recorders are cleaned and lubricated at least annually. Plywood covers over the weirs help prevent freezing during transitional periods.

Stream Discharge

Summary IntervalDaily
Data Accuracy (liters per second) +/- 5%
Maximum QC Threshold (liters per second)280

Upland runoff component of North Unit Watershed S5 weir

Air Temperature

Begin Date..... 1962

Data Accuracy (degree celsius) 0.5 deg C

Instrumentation Description

Air temperatures are recorded with a Belfort model 594-1 hygrothermograph and a US Weather Bureau style max/min thermometer, which are housed in a Standard NWS Shelter.

Methods Description

Missing chart values are estimated from the max/min thermometer readings. Daily max/min temperatures are estimated from the charts to the nearest degree F and entered by hand.

Minimum QC Threshold (degree celsius)-45.0

Maximum QC Threshold (degree celsius)37.80

Precipitation

Begin Date..... 1962

Summary IntervalDaily

Data Accuracy (millimeters) +/- 0.2mm

Instrument Height (meters)1.52

Instrumentation Description

Each watershed in the MEF has at least 2 8" Standard USWB Precipitation Gauges. S5 is also equipped with a Belfort Universal Recording Precipitation Gauge. They are supported on 2-ft diam wooden platforms that hold the gauge tops 5-ft above the ground. Gauges at non-wooded sites are protected with USWB Alter-Type Windshields, and all gauges are cleaned, lubricated and re-calibrated annually. Gauges are re-levelled annually to correct for frost-heaving.

Methods Description

Precipitation data are collected on a weekly basis. Rainfall is measured to the nearest 0.01" in the receiving tube, while snowfall is measured gravimetrically in gauges charged with antifreeze and oil to reduce evaporation. Daily precipitation values are obtained only from the recording gauge. Daily values are transcribed by hand from the recorder charts. Weighted values are estimated for each watershed using the Thiessen Polygon Method.

Maximum QC Threshold (millimeters) 127.0

Total runoff Watershed S6 weir

Hydrologic Gauging Station

Latitude (decimal degrees) 47.51967
Longitude (decimal degrees) -93.46957
Elevation (meters; a.m.s.l.) 422.61
Begin Date 1964
End Date Present
Watershed Area (hectares) 8.9
Associated Watershed

S6

Associated meteorological station

Precipitation: S2_UP; Air temperature: S2_UP.

History

Data have been collected continuously from S6 weir since 1964. Positive flows usually begin in late March with snowmelt and continue through early winter. Recorder chart readings are adjusted to match weekly aluminum point gauge readings. Point gauge and weir notch elevations are verified annually against a known benchmark. All recorders are cleaned and lubricated at least annually. Depth values in the weirs are calculated from the recorder charts using Sigma Scan and a SummaSketch III Professional digitizing pad to create data files, which are processed with a MS Visual Basic script to calculate mean daily flow rates.

Weir Description

Flow is monitored with a 120-degree V-Notch Weir Blade attached to concrete cutoff walls, which are perpendicular to the channels and long enough to force all flow through the weirs. S-6 Weir is equipped with a Belfort model FW-1 strip chart recorder. The recorder is mounted above the float wells in a pond behind the weir and housed in a plywood shelter. A float and pulley system is used to monitor water depth in the weir notch. Chart readings are adjusted to match weekly aluminum point gauge readings. Point gauge and weir notch elevations are verified annually against a known benchmark. The recorder is cleaned and lubricated at least annually. A plywood cover over the weir helps prevent freezing during transitional periods.

Bog runoff component of Watershed S6

weir

Hydrologic Gauging Station

Latitude (decimal degrees)47.51967
Longitude (decimal degrees)-93.46007
Begin Date..... 1964
Watershed Area (hectares)8.9

Associated meteorological station

Precip and Temperature: S2_UP

History

Depth values in the weirs are calculated from the recorder charts using Sigma Scan and a SummaSketch III Professional digitizing pad to create data files, which are processed with a MS Visual Basic script to calculate mean daily flow rates. Chart readings are adjusted to match weekly aluminum point gauge readings. Point gauge and weir notch elevations are verified annually against a known benchmark. All recorders are cleaned and lubricated at least annually. Missing flow values are estimated from precipitation and bog well records as well as runoff data from neighboring watersheds. There are gaps in the data from the S6 weir in 1973 and 1976.

Weir Description

Flow is monitored with a 120-degree V-Notch Weir Blade attached to concrete cutoff walls, which are perpendicular to the channel and long enough to force all flow through the weir. S6 weir has a Belfort FW-1 strip chart recorder, which is mounted above the float well in a pond behind the weir and housed in a plywood shelter. A float and pulley systems is used to monitor water depth in the weir notch. Chart readings are adjusted to match weekly aluminum point gauge readings. Point gauge and weir notch elevations are verified annually against a known benchmark. All recorders are cleaned and lubricated at least annually. Plywood covers over the weirs help prevent freezing during transitional periods.

Stream Discharge

Data Accuracy (liters per second) +/- 5%
Maximum QC Threshold (liters per second)37.4

Upland runoff component of Watershed S6 weir

Hydrologic Gauging Station

Latitude (decimal degrees)47.51967
Longitude (decimal degrees)-93.46957
Begin Date..... 1964
Watershed Area (hectares)8.9

Associated meteorological station

Precip and temperature: S2_UP.

History

Flow monitoring has been continuous in S6 since 1964, except for breaks in 1973 and 1976. Positive flows usually start in late March with snowmelt and continue through early winter. Depth values in the weirs are calculated from the recorder charts using Sigma Scan and a SummaSketch III Professional digitizing pad to create data files, which are processed with a MS Visual Basic script to calculate mean daily flow rates. Chart readings are adjusted to match weekly aluminum point gauge readings. Point gauge and weir notch elevations are verified annually against a known benchmark. All recorders are cleaned and lubricated at least annually. Missing flow values are estimated from precipitation and bog well records as well as run-off data from neighboring watersheds.

Weir Description

Flow is monitored with a 120-degree V-Notch Weir Blade attached to concrete cutoff walls, which are perpendicular to the channel and long enough to force all flow through the weir. S6 weir has a Belfort FW-1 strip chart recorder, which is mounted above the float well in a pond behind the weir and housed in a plywood shelter. A float and pulley systems is used to monitor water depth in the weir notch. Chart readings are adjusted to match weekly aluminum point gauge readings. Point gauge and weir notch elevations are verified annually against a known benchmark. All recorders are cleaned and lubricated at least annually. Plywood covers over the weirs help prevent freezing during transitional periods.

Stream Discharge

Summary IntervalDaily
Data Accuracy (liters per second) +/- 5%
Maximum QC Threshold (liters per second)37.4