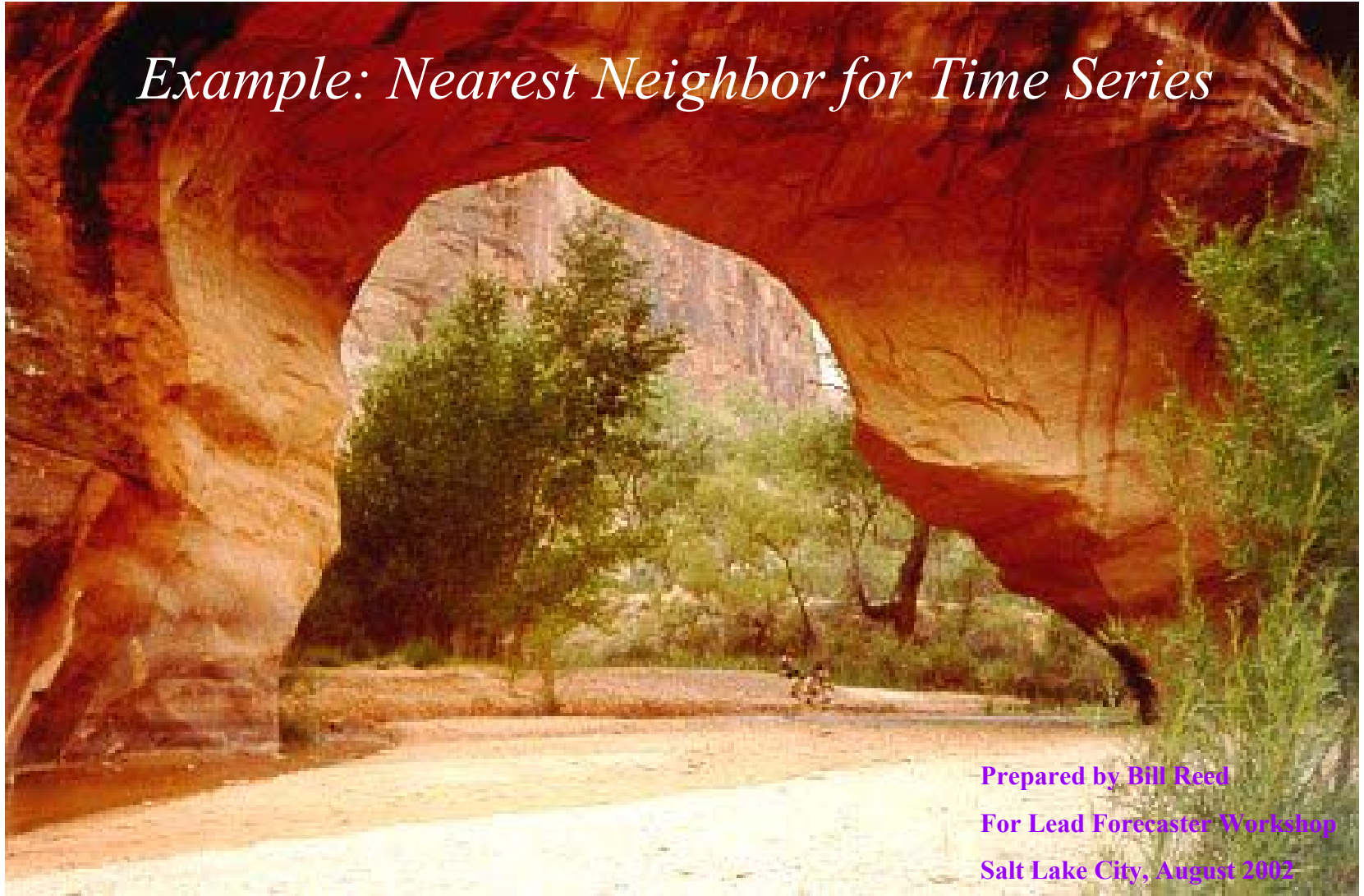


A Best Practice From CBRFC

WebPages Queries

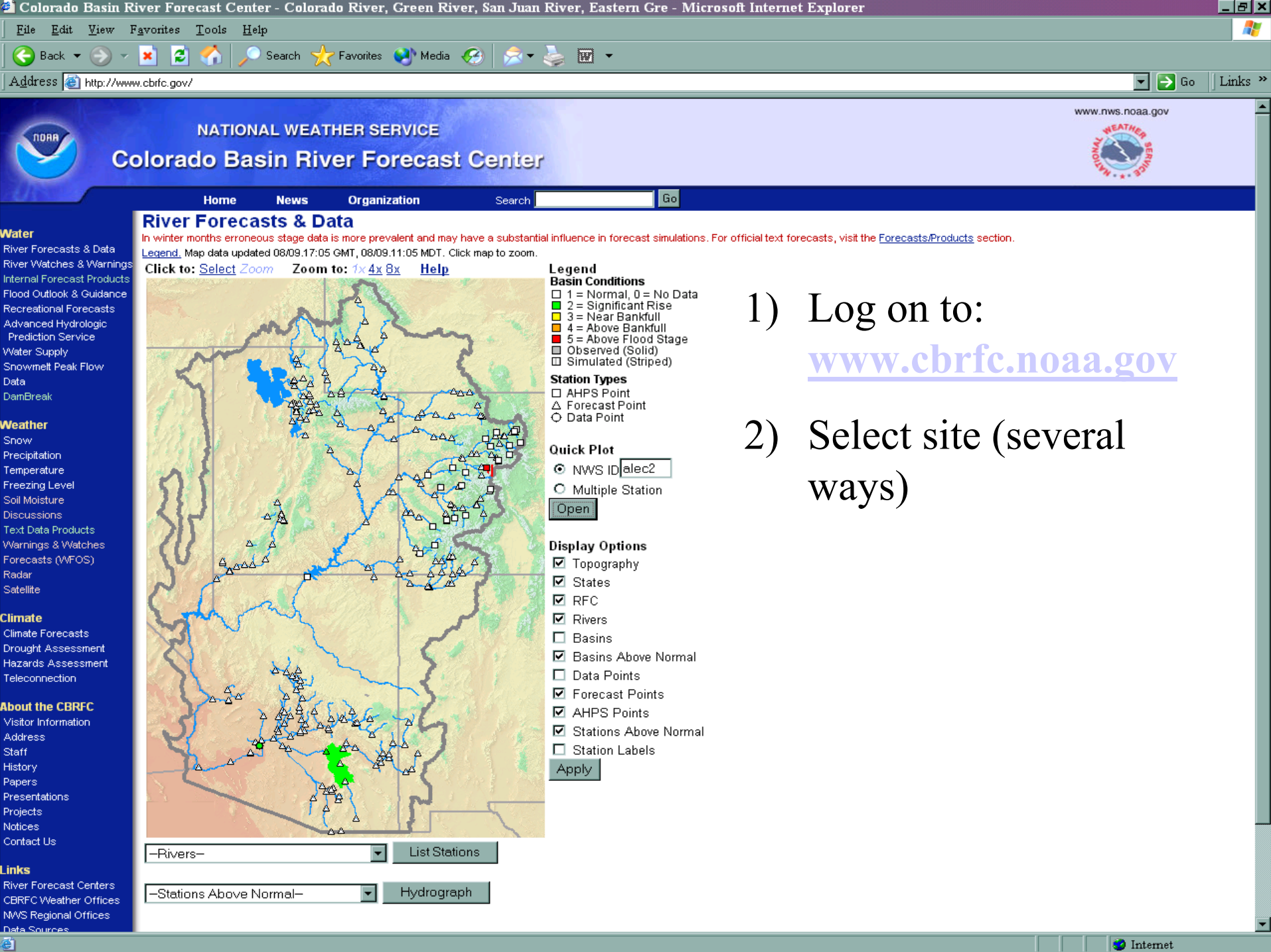
Example: Nearest Neighbor for Time Series



Prepared by Bill Reed

For Lead Forecaster Workshop

Salt Lake City, August 2002



NATIONAL WEATHER SERVICE Colorado Basin River Forecast Center

www.nws.noaa.gov



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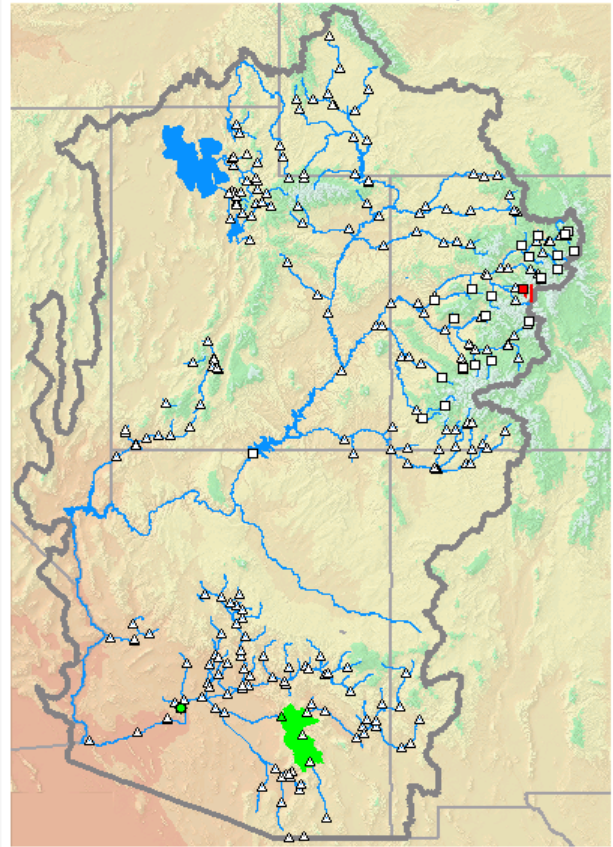
- Links**
- River Forecast Centers
- CBRFC Weather Offices
- NWS Regional Offices
- Data Sources

River Forecasts & Data

In winter months erroneous stage data is more prevalent and may have a substantial influence in forecast simulations. For official text forecasts, visit the [Forecasts/Products](#) section.

Legend. Map data updated 08/09.17:05 GMT, 08/09.11:05 MDT. Click map to zoom.

Click to: [Select](#) [Zoom](#) Zoom to: [1x](#) [4x](#) [8x](#) [Help](#)



- Legend**
- Basin Conditions**
- 1 = Normal, 0 = No Data
 - 2 = Significant Rise
 - 3 = Near Bankfull
 - 4 = Above Bankfull
 - 5 = Above Flood Stage
 - Observed (Solid)
 - Simulated (Striped)

- Station Types**
- AHPS Point
 - Forecast Point
 - Data Point

Quick Plot

NWS ID

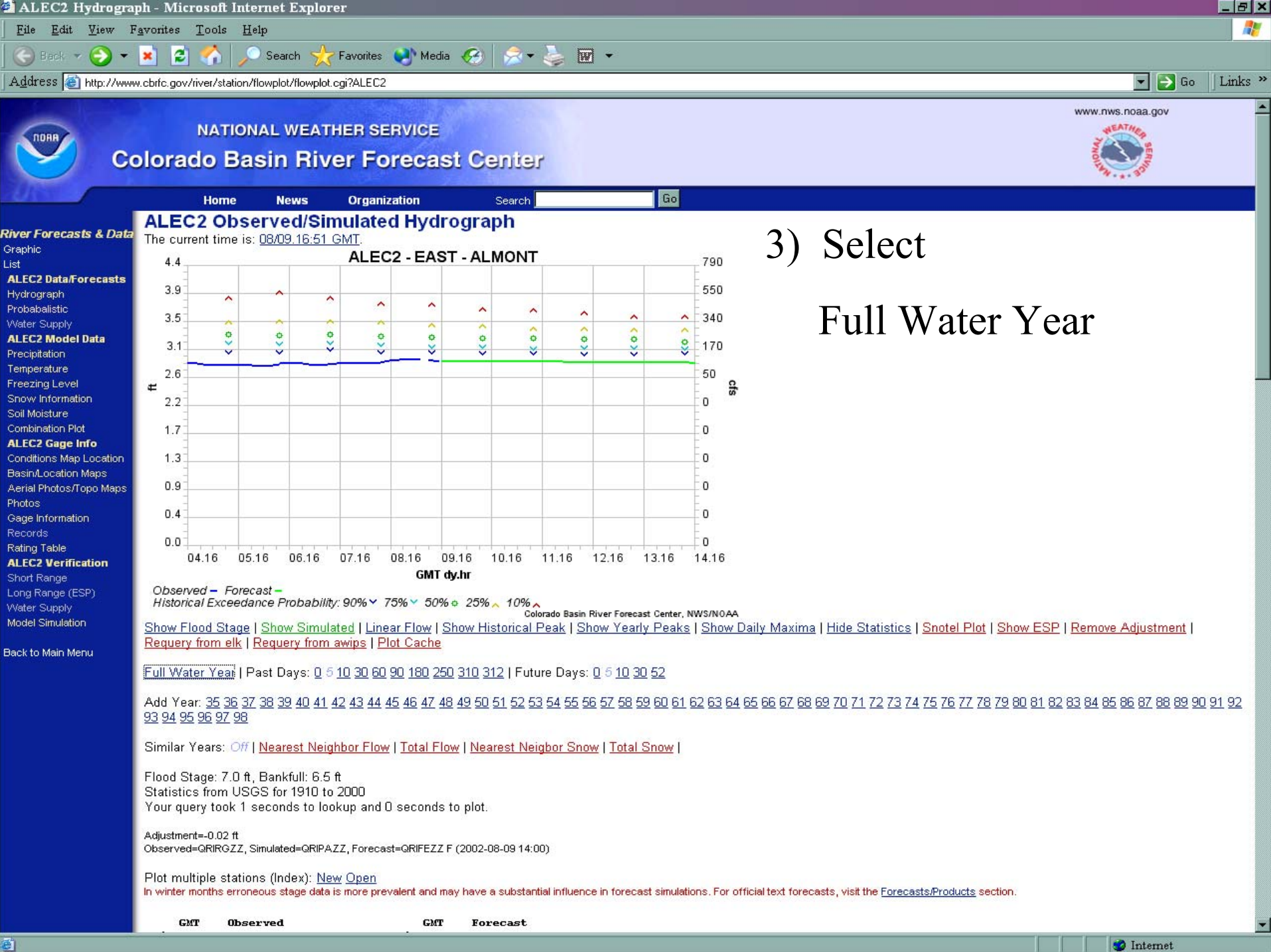
Multiple Station

- Display Options**
- Topography
 - States
 - RFC
 - Rivers
 - Basins
 - Basins Above Normal
 - Data Points
 - Forecast Points
 - AHPS Points
 - Stations Above Normal
 - Station Labels
-

- 1) Log on to:
www.cbrfc.noaa.gov
- 2) Select site (several ways)

-Rivers-

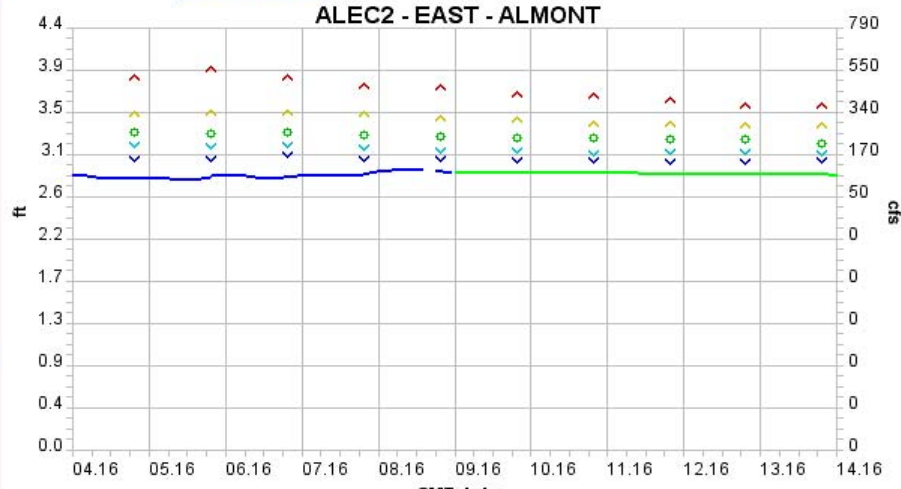
-Stations Above Normal-



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ALEC2 Observed/Simulated Hydrograph

The current time is: 08/09 16:51 GMT.



Observed - Forecast -
Historical Exceedance Probability: 90% ▾ 75% ▾ 50% ◉ 25% ▲ 10% ▲

Colorado Basin River Forecast Center, NWS/NOAA
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Add Year: [35](#) [36](#) [37](#) [38](#) [39](#) [40](#) [41](#) [42](#) [43](#) [44](#) [45](#) [46](#) [47](#) [48](#) [49](#) [50](#) [51](#) [52](#) [53](#) [54](#) [55](#) [56](#) [57](#) [58](#) [59](#) [60](#) [61](#) [62](#) [63](#) [64](#) [65](#) [66](#) [67](#) [68](#) [69](#) [70](#) [71](#) [72](#) [73](#) [74](#) [75](#) [76](#) [77](#) [78](#) [79](#) [80](#) [81](#) [82](#) [83](#) [84](#) [85](#) [86](#) [87](#) [88](#) [89](#) [90](#) [91](#) [92](#) [93](#) [94](#) [95](#) [96](#) [97](#) [98](#)

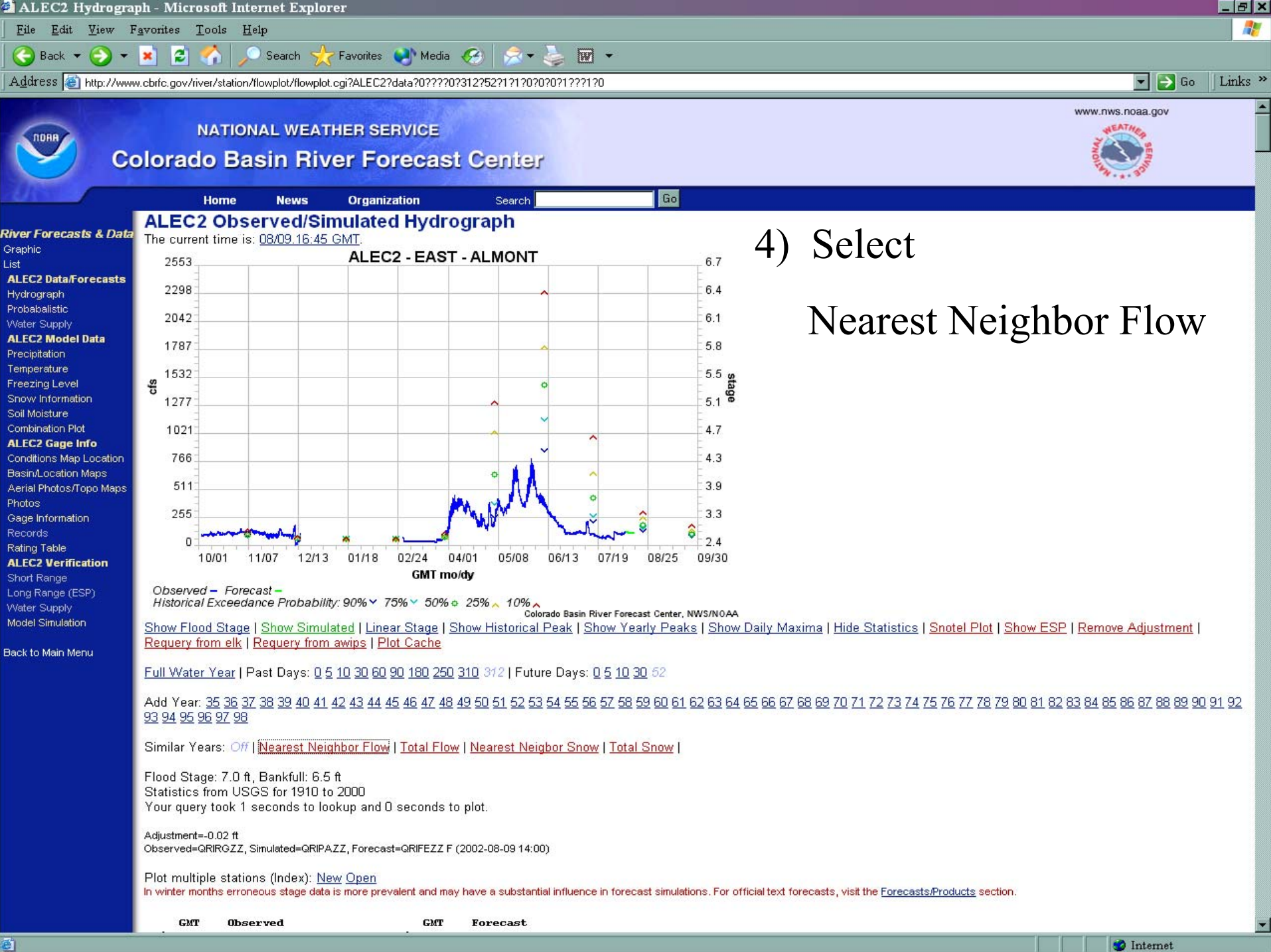
Similar Years: [Off](#) | [Nearest Neighbor Flow](#) | [Total Flow](#) | [Nearest Neighbor Snow](#) | [Total Snow](#) |

Flood Stage: 7.0 ft, Bankfull: 6.5 ft
Statistics from USGS for 1910 to 2000
Your query took 1 seconds to lookup and 0 seconds to plot.

Adjustment=-0.02 ft
Observed=QRIRGZZ, Simulated=QRIPAZZ, Forecast=QRIFEZZ F (2002-08-09 14:00)

Plot multiple stations (Index): [New](#) [Open](#)
In winter months erroneous stage data is more prevalent and may have a substantial influence in forecast simulations. For official text forecasts, visit the [Forecasts/Products](#) section.

3) Select Full Water Year

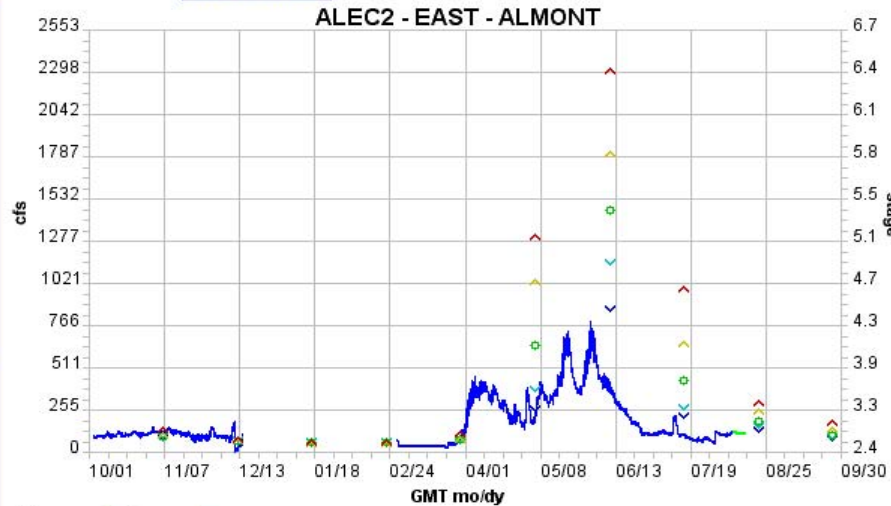


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ALEC2 Observed/Simulated Hydrograph

The current time is: 08/09 16:45 GMT.



4) Select
Nearest Neighbor Flow

Observed - Forecast -
 Historical Exceedance Probability: 90% 75% 50% 25% 10%

Colorado Basin River Forecast Center, NWS/NOAA

[Show Flood Stage](#) | [Show Simulated](#) | [Linear Stage](#) | [Show Historical Peak](#) | [Show Yearly Peaks](#) | [Show Daily Maxima](#) | [Hide Statistics](#) | [Snotel Plot](#) | [Show ESP](#) | [Remove Adjustment](#) | [Reguery from elk](#) | [Reguery from awips](#) | [Plot Cache](#)

Full Water Year | Past Days: 0 5 10 30 60 90 180 250 310 312 | Future Days: 0 5 10 30 52

Add Year: 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98

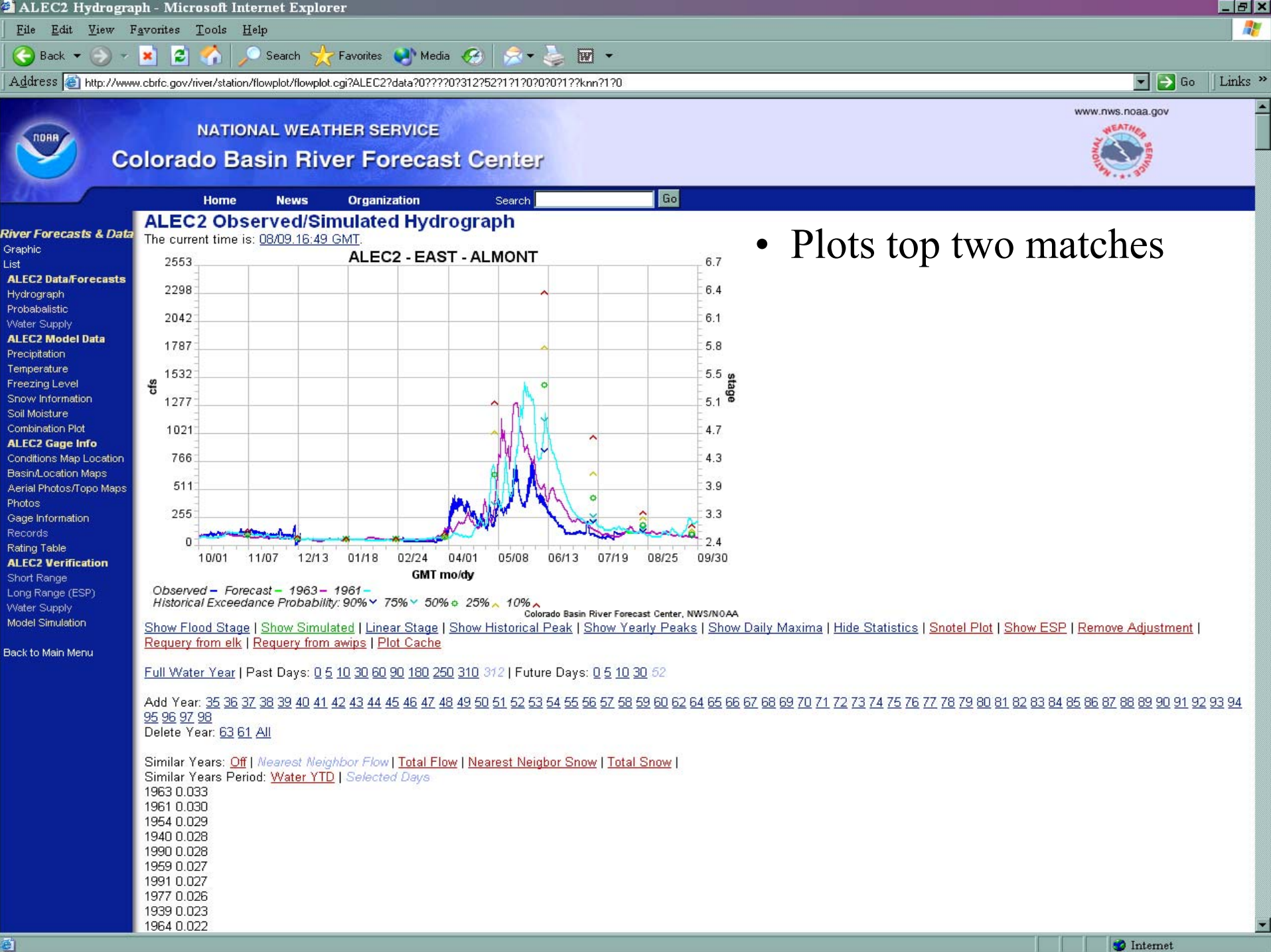
Similar Years: Off | Nearest Neighbor Flow | Total Flow | Nearest Neighbor Snow | Total Snow |

Flood Stage: 7.0 ft, Bankfull: 6.5 ft
 Statistics from USGS for 1910 to 2000
 Your query took 1 seconds to lookup and 0 seconds to plot.

Adjustment=-0.02 ft
 Observed=QRIRGZZ, Simulated=QRIPAZZ, Forecast=GRIFEZZ F (2002-08-09 14:00)

Plot multiple stations (Index): [New](#) [Open](#)
 In winter months erroneous stage data is more prevalent and may have a substantial influence in forecast simulations. For official text forecasts, visit the [Forecasts/Products](#) section.

GMT Observed GMT Forecast



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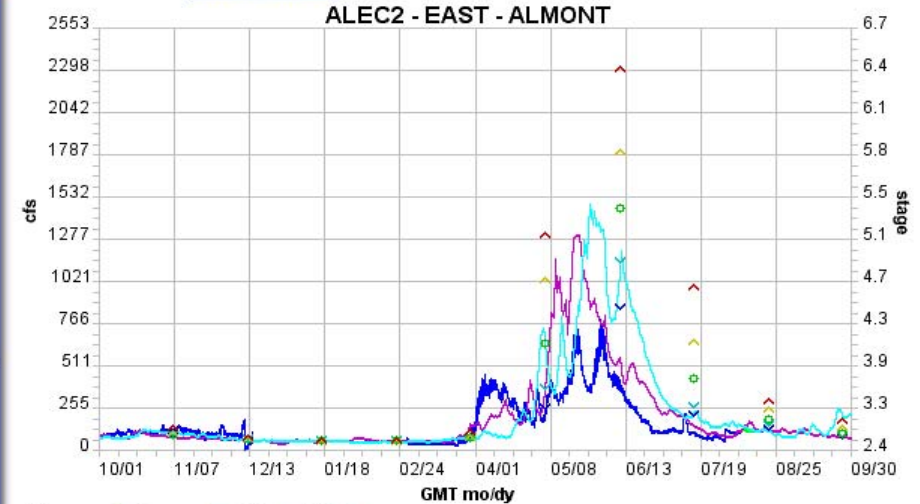
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ALEC2 Observed/Simulated Hydrograph

The current time is: 08/09 16:49 GMT.



Observed - Forecast - 1963 - 1961
 Historical Exceedance Probability: 90% ▾ 75% ▾ 50% ◻ 25% ◉ 10% ▲
 Colorado Basin River Forecast Center, NWS/NOAA

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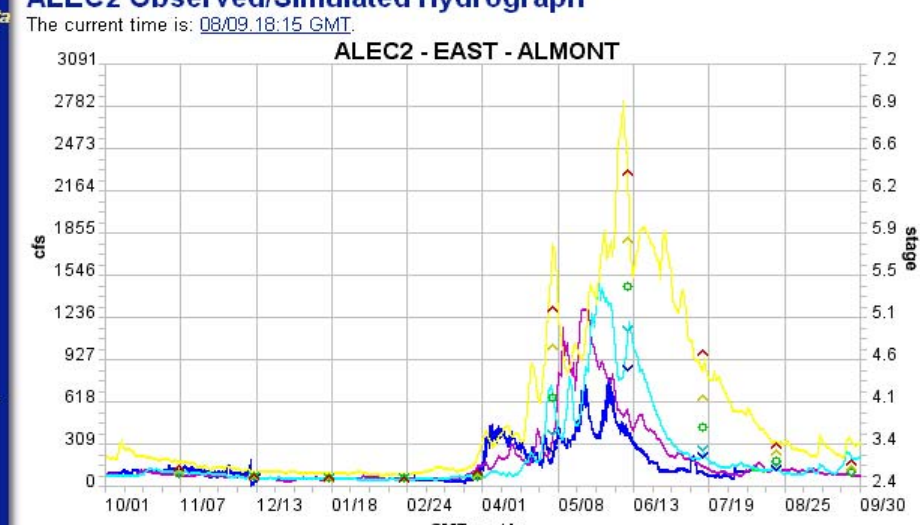
Add Year: [35](#) [36](#) [37](#) [38](#) [39](#) [40](#) [41](#) [42](#) [43](#) [44](#) [45](#) [46](#) [47](#) [48](#) [49](#) [50](#) [51](#) [52](#) [53](#) [54](#) [55](#) [56](#) [57](#) [58](#) [59](#) [60](#) [62](#) [64](#) [65](#) [66](#) [67](#) [68](#) [69](#) [70](#) [71](#) [72](#) [73](#) [74](#) [75](#) [76](#) [77](#) [78](#) [79](#) [80](#) [81](#) [82](#) [83](#) [84](#) [85](#) [86](#) [87](#) [88](#) [89](#) [90](#) [91](#) [92](#) [93](#) [94](#) [95](#) [96](#) [97](#) [98](#)
 Delete Year: [63](#) [61](#) [All](#)

Similar Years: [Off](#) | [Nearest Neighbor Flow](#) | [Total Flow](#) | [Nearest Neighbor Snow](#) | [Total Snow](#) |
 Similar Years Period: [Water YTD](#) | [Selected Days](#)

- 1963 0.033
- 1961 0.030
- 1954 0.029
- 1940 0.028
- 1990 0.028
- 1959 0.027
- 1991 0.027
- 1977 0.026
- 1939 0.023
- 1964 0.022

- Plots top two matches

River Forecasts & Data
ALEC2 Observed/Simulated Hydrograph



- Worst Match Added
- 5) Can also select Total Flow

Observed - Forecast - 1963 - 1961 - 1986
 Historical Exceedance Probability: 90% 75% 50% 25% 10%

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Full Water Year | Past Days: 0 5 10 30 60 90 180 250 310 312 | Future Days: 0 5 10 30 52

Add Year: 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 62 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 87 88 89 90 91 92 93 94 95 96 97 98
 Delete Year: 63 61 86 All

Similar Years: [Off](#) | [Nearest Neighbor Flow](#) | [Total Flow](#) | [Nearest Neighbor Snow](#) | [Total Snow](#)
 Similar Years Period: [Water YTD](#) | [Selected Days](#)

- 1963 0.033
- 1961 0.030
- 1954 0.029
- 1940 0.028
- 1990 0.028
- 1959 0.027
- 1991 0.027
- 1977 0.026
- 1939 0.023
- 1964 0.022

Microsoft Internet Explorer

Address: http://www.cbrcf.gov/river/station/flowplot/flowplot.cgi?ALEC2?data?0????0?312?52?1?1?0?0?0?0??sum?1?0

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Colorado Basin River Forecast Center

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ALEC2 Observed/Simulated Hydrograph
The current time is: 08/09 17:56 GMT.

ALEC2 - EAST - ALMONT

Observed - Forecast - 1981 - 1954 -
Historical Exceedance Probability: 90% v 75% v 50% o 25% o 10% ^

Colorado Basin River Forecast Center, NWS/NOAA

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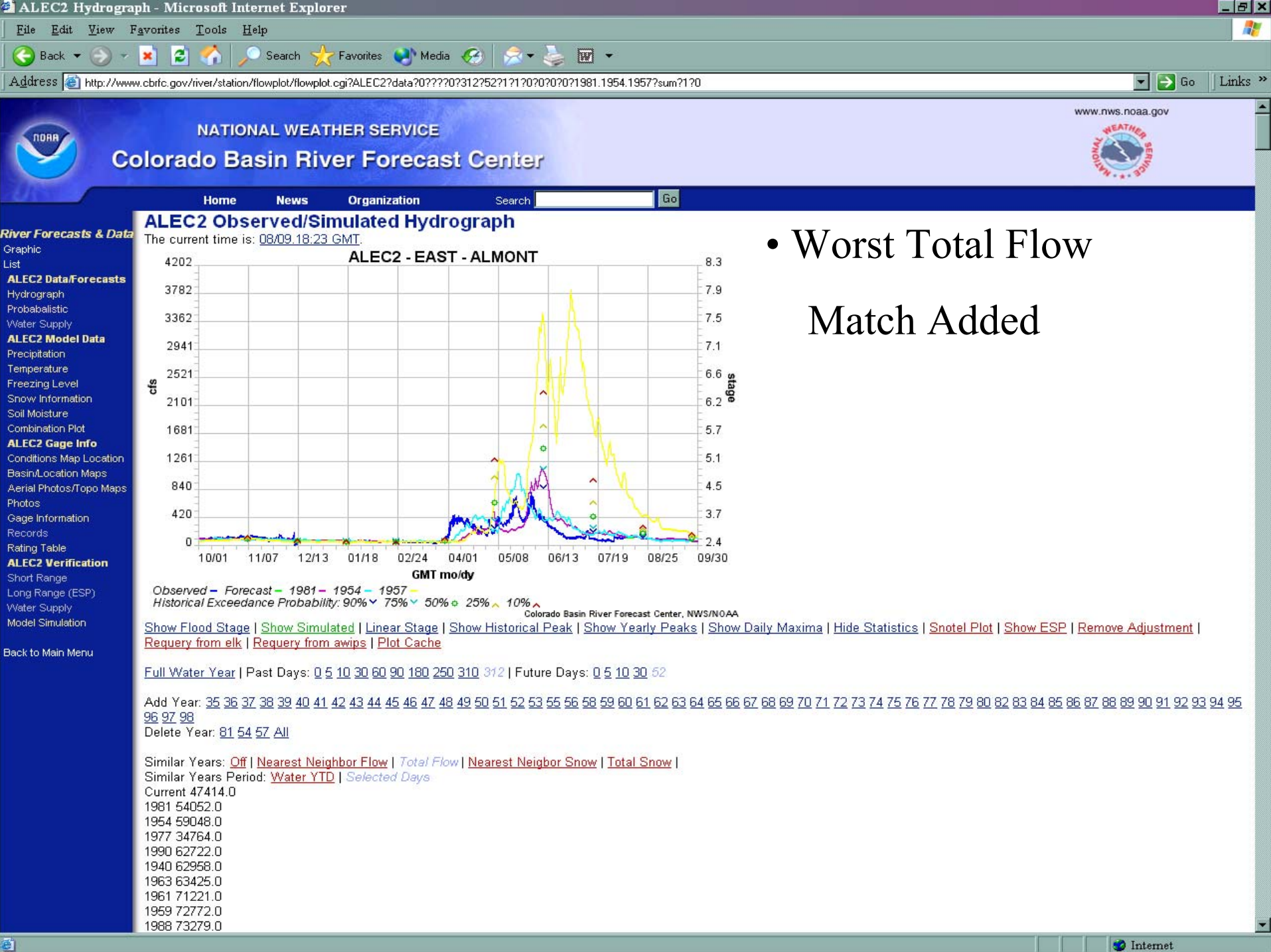
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Delete Year: [81](#) [54](#) [All](#)

Similar Years: [Off](#) | [Nearest Neighbor Flow](#) | [Total Flow](#) | [Nearest Neighbor Snow](#) | [Total Snow](#) |
Similar Years Period: [Water YTD](#) | [Selected Days](#)
Current 47414.0
1981 54052.0
1954 59048.0
1977 34764.0
1990 62722.0
1940 62958.0
1963 63425.0
1961 71221.0
1959 72772.0
1988 73279.0

Internet

- Top two matches by Total Flow



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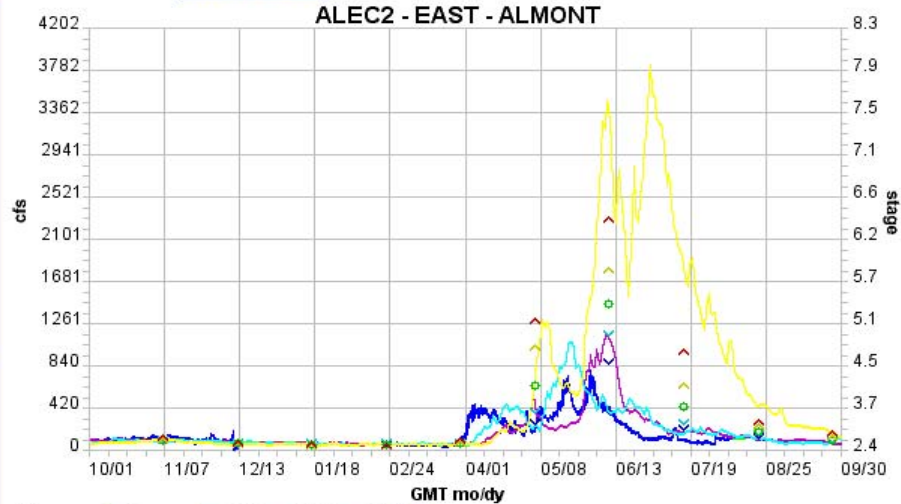
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The current time is: 08/09 18:23 GMT.



Observed - Forecast - 1981 - 1954 - 1957
 Historical Exceedance Probability: 90% ▾ 75% ▾ 50% ○ 25% ▲ 10% ▲

Colorado Basin River Forecast Center, NWS/NOAA

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Full Water Year | Past Days: 0 5 10 30 60 90 180 250 310 312 | Future Days: 0 5 10 30 52

Add Year: 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 55 56 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98

Delete Year: 81 54 57 All

Similar Years: [Off](#) | [Nearest Neighbor Flow](#) | [Total Flow](#) | [Nearest Neighbor Snow](#) | [Total Snow](#) |
 Similar Years Period: [Water YTD](#) | [Selected Days](#)

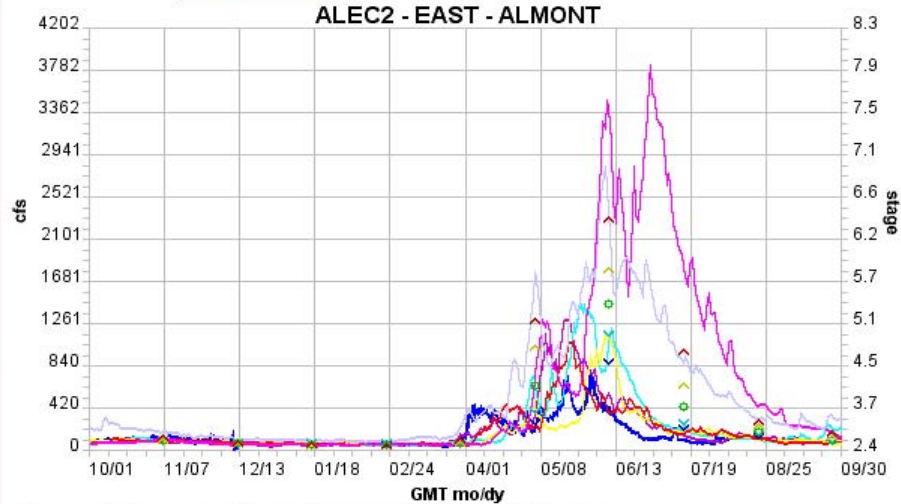
- Current 47414.0
- 1981 54052.0
- 1954 59048.0
- 1977 34764.0
- 1990 62722.0
- 1940 62958.0
- 1963 63425.0
- 1961 71221.0
- 1959 72772.0
- 1988 73279.0

- Worst Total Flow
Match Added

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ALEC2 Observed/Simulated Hydrograph

The current time is: 08/09 18:29 GMT.



• Mix and Match

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Delete Year: 63 61 81 54 57 86 All

Similar Years: Off | [Nearest Neighbor Flow](#) | [Total Flow](#) | [Nearest Neighbor Snow](#) | [Total Snow](#) |

Flood Stage: 7.0 ft, Bankfull: 6.5 ft
Statistics from USGS for 1910 to 2000
Your query took 2 seconds to lookup and 5 seconds to plot.

Adjustment=-0.02 ft
Observed=QRIRGZZ, Simulated=QRIPAZZ, Forecast=QRIFEZZ F (2002-08-09 14:00)

Plot multiple stations (Index): [New](#) [Open](#)
In winter months erroneous stage data is more prevalent and may have a substantial influence in forecast simulations. For official text forecasts, visit the [Forecasts/Products](#) section.

Will Work For Any Time Series

- **Upmanu Lall and Ashish Sharma**, A Nearest Neighbor Bootstrap for Time Series Resampling
- **S. Yakowitz**, Nearest-Neighbor Methods for Time Series Analysis