# USBR and CBRFC Natural Flow Comparison Report

## Background and Motivation

## Data and Methods

The two datasets used in the comparison were the “monthly observed streamflow”[[1]](#footnote--1) from the CBRFC and the “Colorado River Basin Natural Flow”[[2]](#footnote-0) from reclamation. The first data set is used to in model calibration by the CBRFC.

Six sites with overlapping records in both data sets were used in the comparison. The sites are shown in Table 1. A set of sites was initially identified for comparison based on the 24-month study flow input locations. Sites were not considered which did have data available in both sets. For example Morrow Point (MPSC2) is available in the CBRFC data set but not in the Recalmation data set.

Table : Sites used in this comparison.

|  |  |  |  |
| --- | --- | --- | --- |
| **USGS Site Name** | **USGS gauge** | **Abrev. Name** | **RFC Name** |
| Gunnison River Above Blue Mesa Reservoir, CO | 09124700 | BlueMesa | BMDC2 |
| Gunnison River At Crystal Reservoir, CO | 09127800 | Crystal | CLSC2 |
| San Juan River Near Archuleta, NM | 09355500 | Navajo | NVRN5 |
| Green River Below Fontenelle Res WY | 09211200 | Fontenelle | GBRW4 |
| Green River Near Greendale, UT | 09234500 | FlamingGorge | GRNU1 |
| Colorado River At Lees Ferry, AZ | 09380000 | LeesFerry | GLDA3 |

## Results

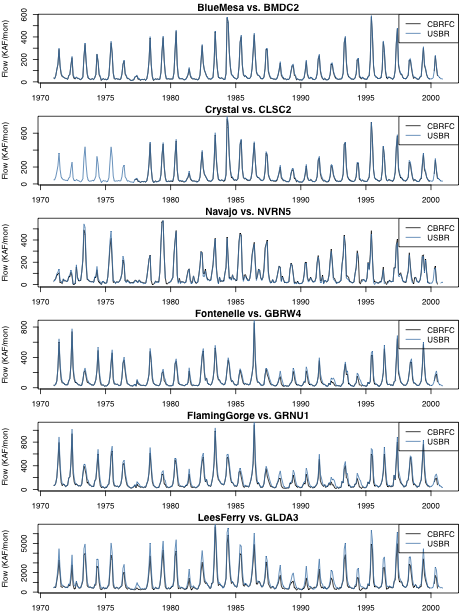


Figure . Time series of CBRFC and USBR natural flow at six comparison sites.

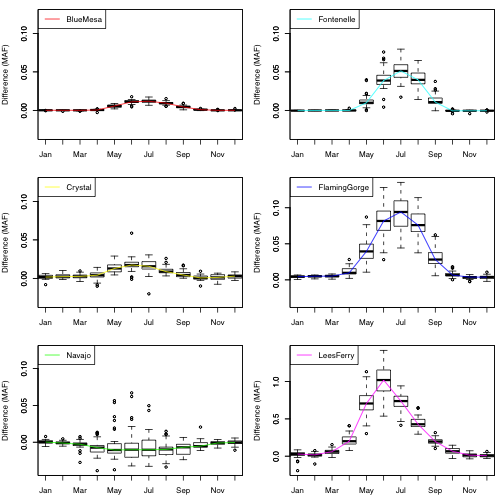


Figure 2. Monthly model differences at each comparison site. Box plots represent the spread of model differences over the 1971-2000 period for each month with line connecting the medians. Note the difference in scale of the Lees Ferry plot.

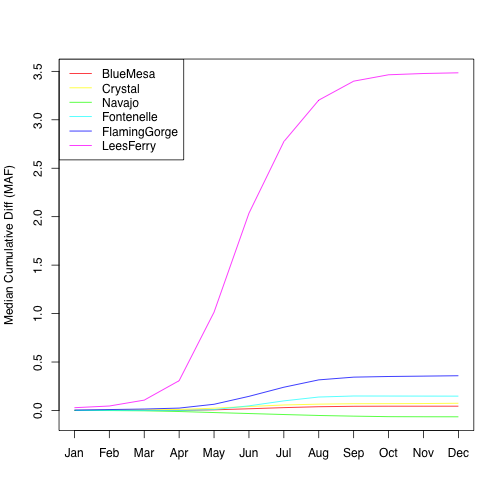


Figure 3. Cumulative median (over 1971-2000 period) natural flow differences at each comparison site.

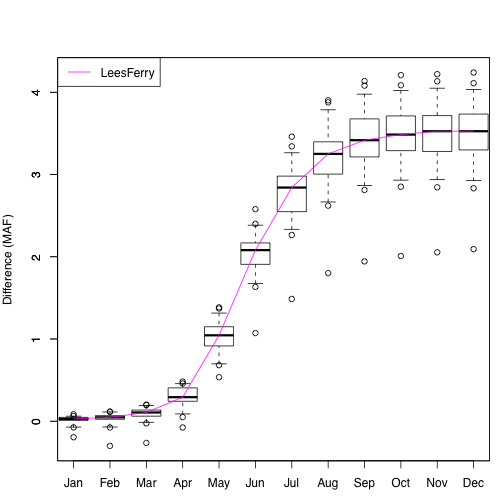


Figure . Cumulative (over 1971-2000 period) natural flow for each year at Lees Ferry showing the range of differences.

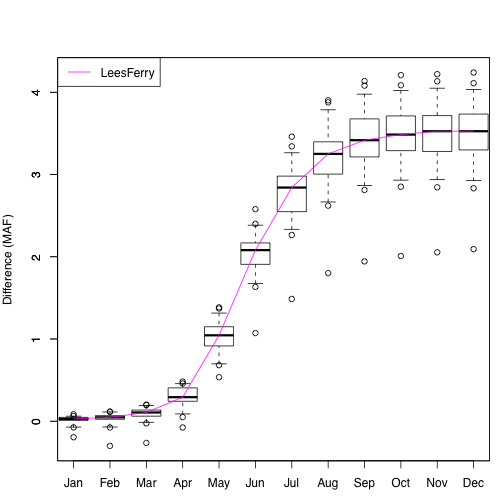


Figure 4. Cumulative natural flow differences plotted with cumulative total consumptive uses and losses and agriculture and irrigation consumptive use.

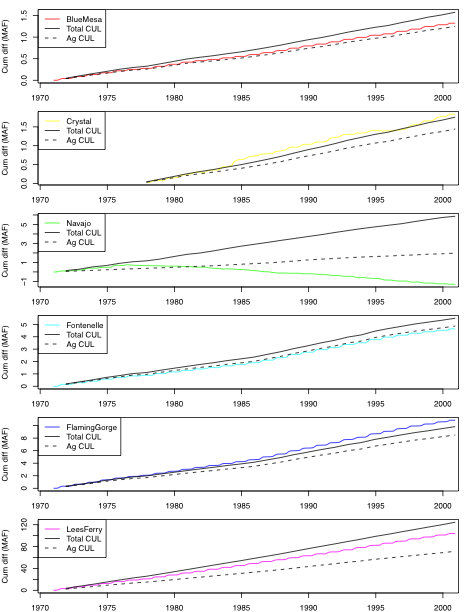


Figure . Relative percent difference in natural flow at each comparison site.

1. http://www.nwrfc.noaa.gov/westernwater/index.php?page=data [↑](#footnote-ref--1)
2. http://www.usbr.gov/lc/region/g4000/NaturalFlow/index.html [↑](#footnote-ref-0)