**Plot Page Time Range Enhancement for TVA FEWS Integration**
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**Requirements**

**Use case:** Each day, an operations model with a two week run range is moved ahead one day and run. About thirty plots are used which need to show data for the current calendar year. This is typically a smaller range than the available series data, but much larger than the run range.

It should be possible to have Plot Pages automatically adjust to a time range defined in terms of the following symbolic times, possibly offset by a specified number of timesteps:

|  |  |  |
| --- | --- | --- |
| 1  |  Run Start  | ... from the run controller's Run Parameters. |
| 2 |  Run End  |
| 3 |  Calendar Year Start  | ... of the year containing the Run Start date/time. |
| 4 |  Calendar Year End  |
| 5 |  Water Year Start  | ... of the water year containing the Run Start date/time. The water year can start at the beginning of any month. The Water Year Start Month is settable in the Simulation Run Parameters dialog. |
| 6 |  Water Year End  |

**Existing Time Range Settings (RiverWare 6.5)**

|  |  |
| --- | --- |
|     | http://cadswes2.colorado.edu/%7Ephilw/2014/TVA/FEWS/PlotTimeRange/images/Plot-EditTimeRange-RW65-B.png |
| http://cadswes2.colorado.edu/%7Ephilw/2014/TVA/FEWS/PlotTimeRange/images/tp.gif |

Saved time plots in a RiverWare model "remember" their displayed time range -- the range which was active the last time the containing plot page was saved.

The time range can be adjusted with various toolbar functions (including "auto scale", "scale to run range" and "move left" and "move right" arrow buttons). The active (displayed) time range can also be viewed and directly edited using the Edit Time Range popup dialog (*see accompanying image*).

As with all adjustments made to the displayed time range, changes made in the Edit Time Range popup dialog affect the currently displayed time range, but are *temporary* unless the plot page is resaved.

**Proposed Enhancement**

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| --- | --- |
|     | http://cadswes2.colorado.edu/%7Ephilw/2014/TVA/FEWS/PlotTimeRange/images/Plot-EditTimeRange-Mockup1.pnghttp://cadswes2.colorado.edu/%7Ephilw/2014/TVA/FEWS/PlotTimeRange/images/Plot-EditTimeRange-Mockup2.png |
| http://cadswes2.colorado.edu/%7Ephilw/2014/TVA/FEWS/PlotTimeRange/images/tp.gif |

The user can associate with each Plot Page a "Symbolic Time Range" based on the criteria described above (e.g. Run Start, plus or minus a specified number of timesteps). Two variations of designs for these dialogs are shown to the right.

That Symbolic Time Range can be applied to the Plot Page's currently displayed time range *on demand,* or *automatically* each time the Plot Page is shown. This is implemented by setting the "Displayed Time Range" absolute date/time timestep values, and applying those values to the currently selected plot -- OR to all plots in the Plot Page if the plots are "linked". If the "Reapply each time plot page is shown" checkbox is on, this happens automatically, without having to show the "Edit Time Range" dialog.

The "From" and "To" option menus in the Symbolic Time Range panel support these choices:



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