



**CADSWES**

University of Colorado

Center for Advanced Decision Support for Water and Environmental Systems

# Graphical Policy Analysis Tool

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RiverWare User Group Meeting  
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# Why GPAT?

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- RiverWare Output Large, esp.
  - Alternative Hydrologic Scenarios / Histories: MRM
  - Alternative policies
- Information from Data
  - Statistics
  - Graphs
  - Dynamic generation
- Presentations and Documents
  - e.g. Stakeholders meetings and EIS

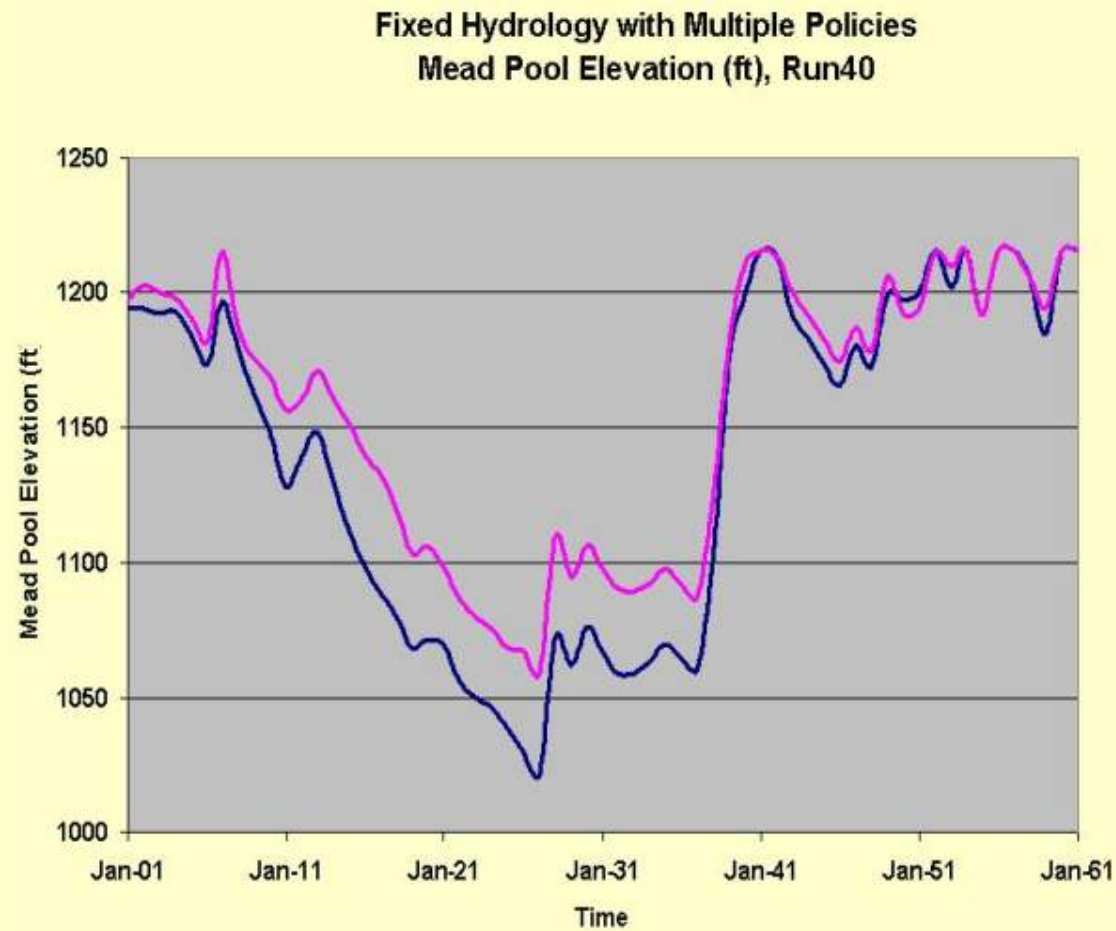
# What is GPAT?

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- Excel Add-in written in VBA
  - Download from the RiverWare web site
- Inputs are Excel Workbooks
  - Dimensions are Slots, Time, Runs, and Policies
  - Variety of orientations
- Outputs are Charts and Worksheets in a Workbook
  - Typical Chart: several statistical time series
  - Present directly or paste into documents

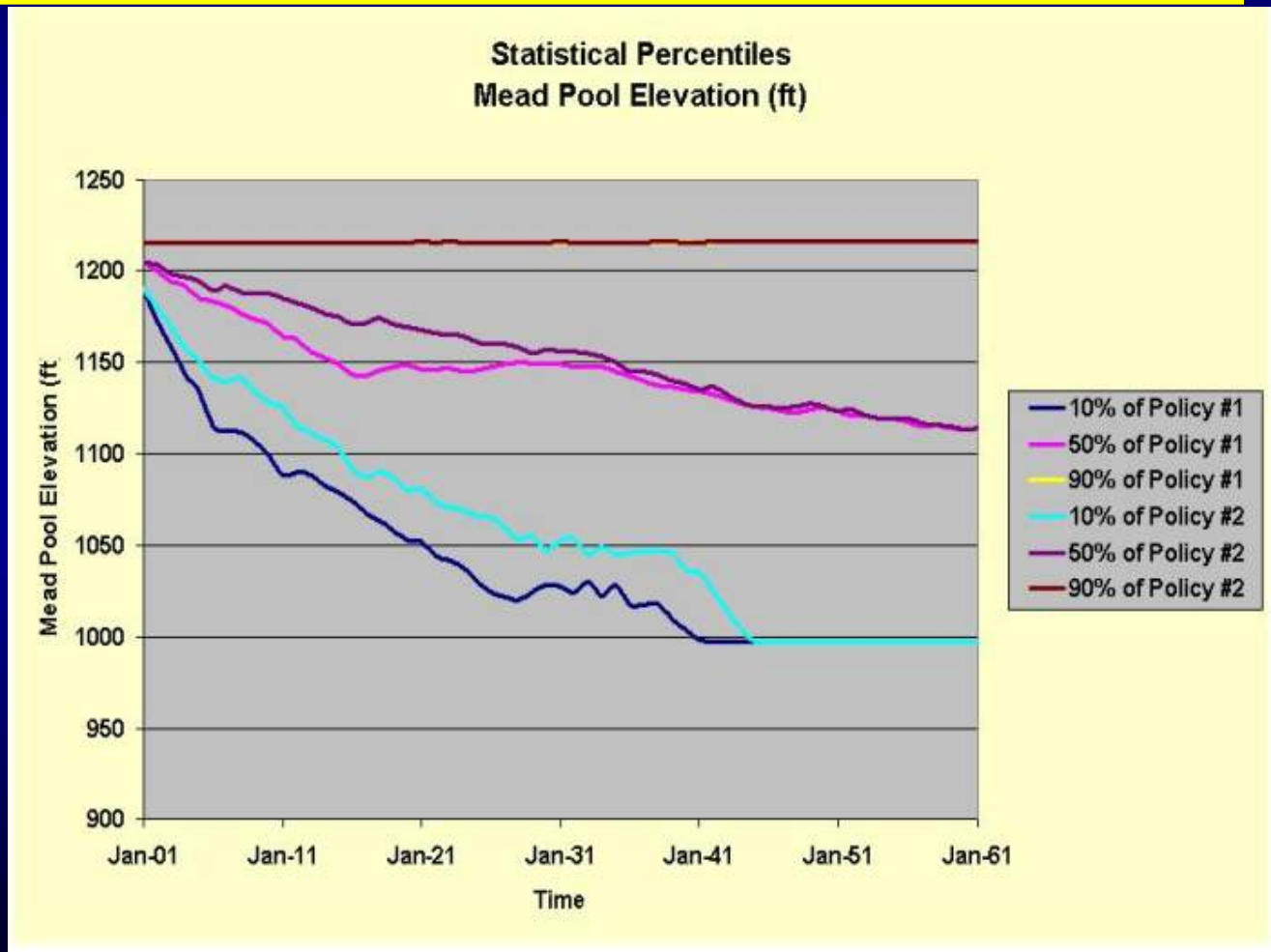
# Compare Traces

- Compare traces under different policies



# Simple Statistics

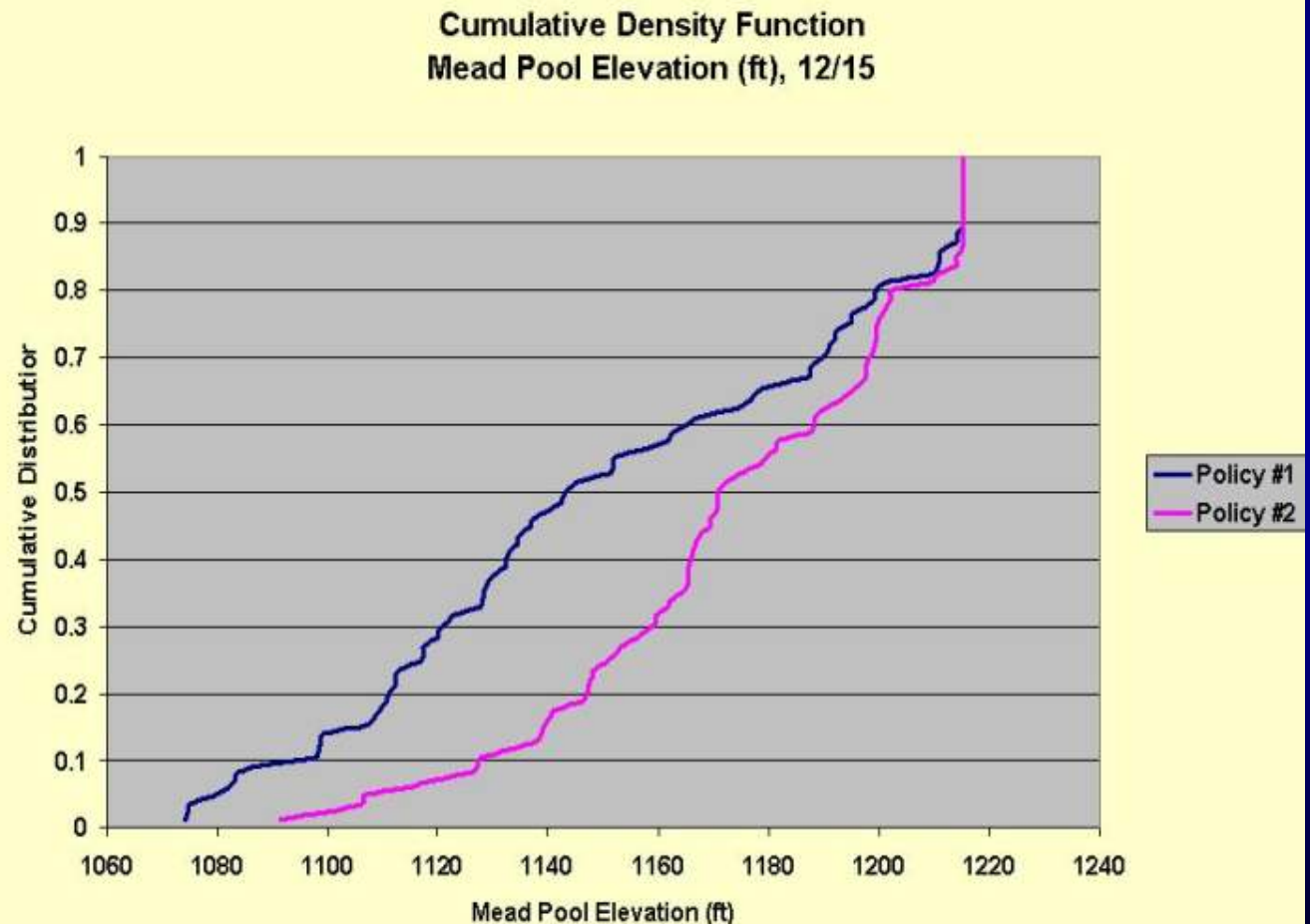
- Minimum
- Maximum
- Mean
- Std. Dev.
- Median
- Percentiles
  - Alternative Methods



# Distributions

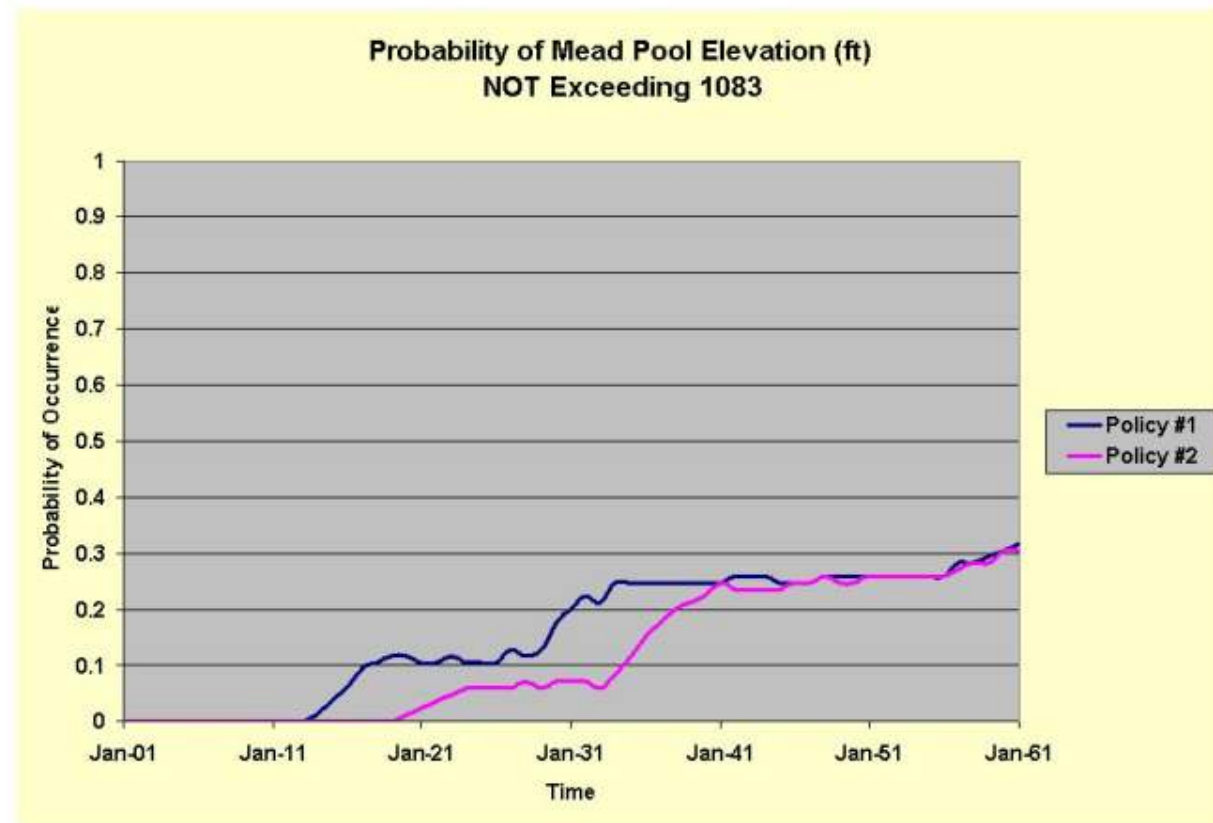
## Histogram CDF

- One date
- All time
- Annual peak
- Maximum for a given duration



# Probability of Events

- Binary events
- Exceedance
- Occurrence in a range
- **Compound Events**



# One Common Route to GPAT\*

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- Multiple Run Management
  - One run for each Hydrologic Scenarios or Histories
  - EITHER Generate RDF file
    - Followed by separate Excelwriter run
  - OR Excel output directly from RiverWare
    - Large memory demand: Excelwriter and RiverWare
  - Generate an Excel workbook
- One MRM run and workbook per policy

\*GPAT allows alternative orientations and sources of input



# Small Changes in the Past Year

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## ➤ Bug fixes

- Problem with 2 digit years when going past 100 years
- Standard Deviation when the values are constant

## ➤ Internal code documentation

- Investment in the long term maintenance of GPAT

# Potential Enhancements\*

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- More format control
  - Titles
  - Axes Titles and Scales
- Save and load graph formatting preferences
- CDF: Plot only every  $n^{\text{th}}$  point
- Histogram for all distribution graphs (#3)
- Allow plotting of multiple runs with different numbers of traces
- Allow time steps as columns
- Others?

\* A plug from the Shameless Commerce Division, as they say on NPR's Car Talk .