

Effective Communications

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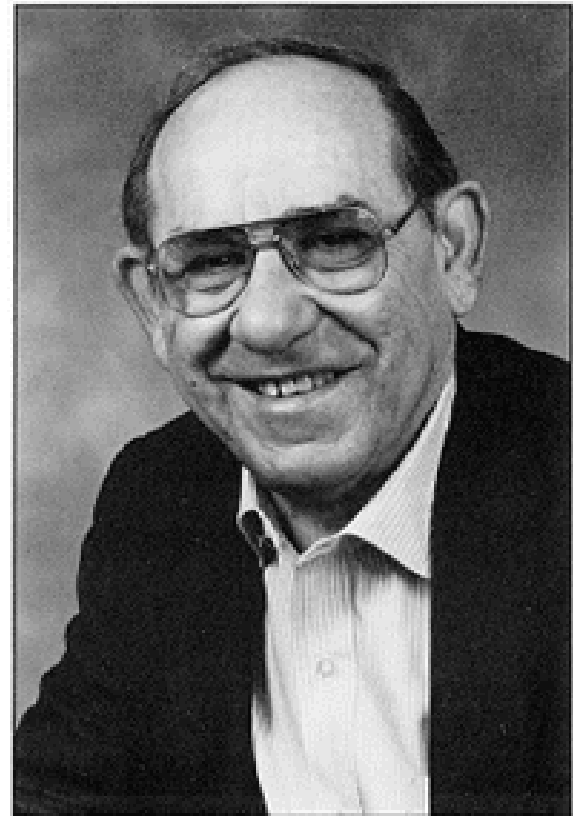
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Effective Communications

- What are the characteristics of effective communication of science to decision makers?
- What is needed to better sustain a continuing dialogue?
- What are examples of successful decision support collaborations that should inform program design?

User Perspective?

- "You can observe a lot just by watchin'." (*Data matters!*)
- "The future ain't what it used to be." (*What happened in ~1976?*)
- "It's tough to make predictions, especially about the future" (*A water manager's unending challenge!*)



Y. Berra

Good Communications

Is it easy to access?

Is meaning clear?

Is it in a rich context?

Can the user determine relevance?

Tabular WSF Information

```

=====
                                RIO GRANDE BASIN
                                Streamflow Forecasts - April 1, 2002
=====
                                <=== Drier === Future Conditions === Wetter ===>
Forecast Pt | ===== Chance of Exceeding * ===== |
Forecast    | 90%      70%  | 50% (Most Prob) | 30%      10%  | 30 Yr Avg
Period      | (1000AF) (1000AF) | (1000AF) (% AVG.) | (1000AF) (1000AF) | (1000AF)
=====
Rio Grande nr Del Norte
  APR-SEP      129      157      177      33      242      339      531

Jemez River nr Jemez
  MAR-JUL      2.3      3.4      4.2      9      12.7      25      47

Jemez Canyon Reservoir inflow
  MAR-JUL      1.1      2.1      2.7      7      11.9      : Historical Average

Rio Grande at San Marcial
  MAR-JUL      3.0      7.0      10.0      2      147      349      573
    
```

Location

Time Period

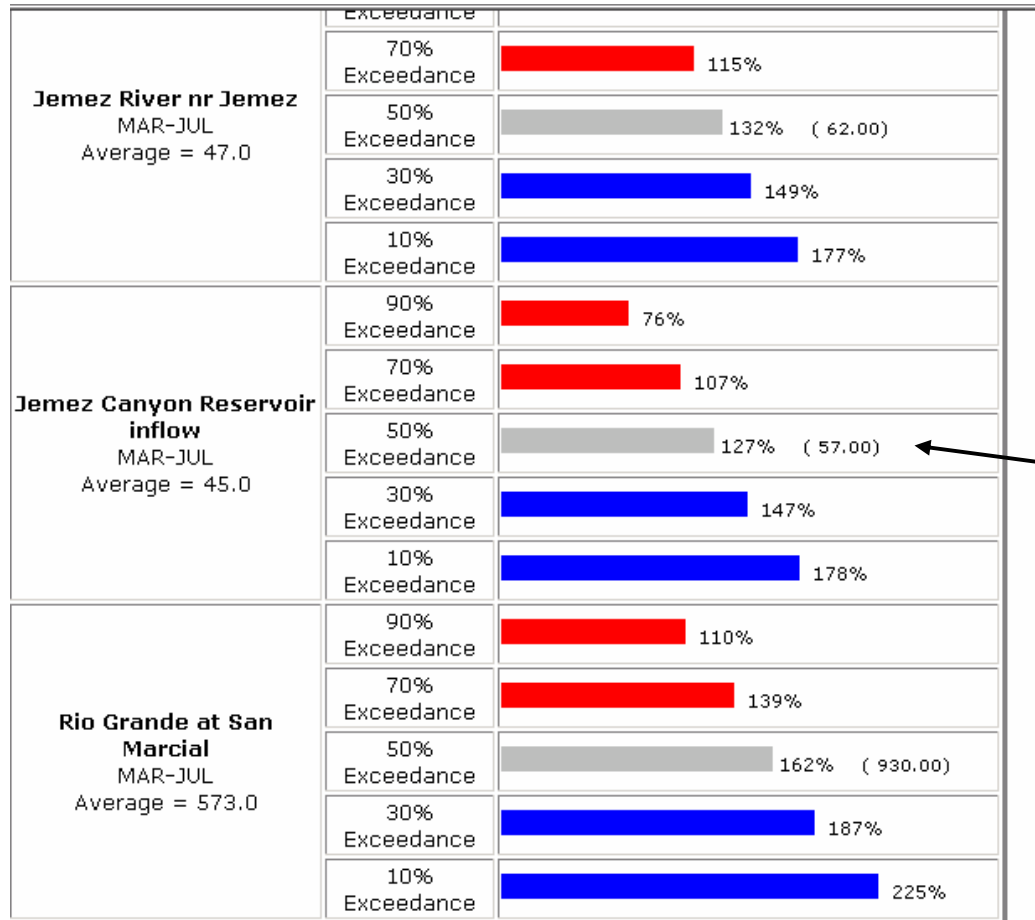
Error Bounds

**“Most Probable”
Water Volume**



WSF Graph Presentation

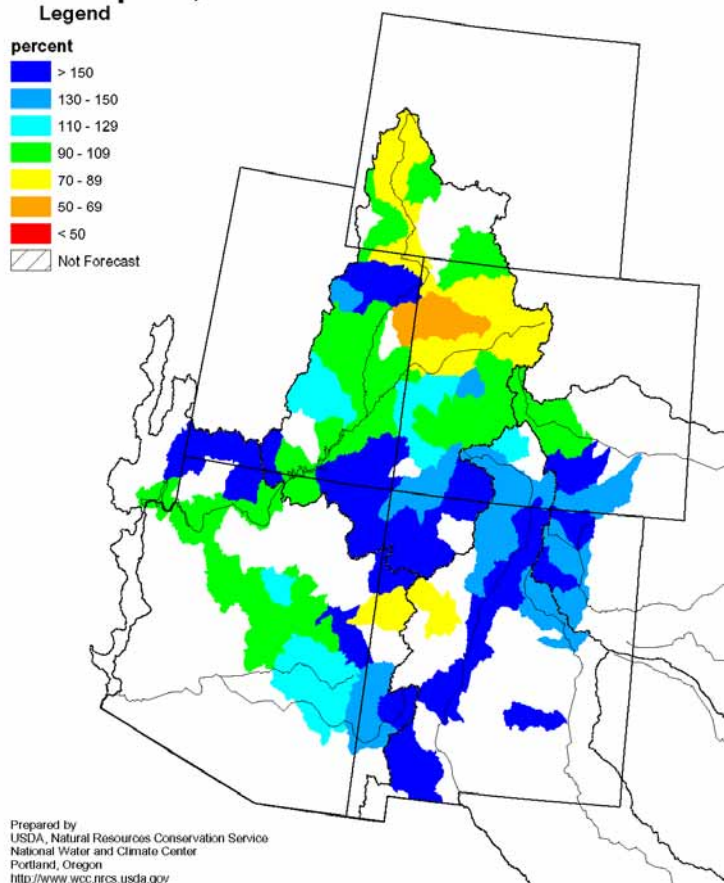
April 1, 2005 WSF



- Same Information as table.
- Color coded to show above and below average volume forecasts.
- Some confusion with double percentages, e.g. the 50% volume exceedance is 127% of average.
- No temporal information, e.g. previous month's forecast not shown.

WSF Map

Spring and Summer Streamflow Forecasts as of April 1, 2005



- Provides spatial orientation.
- Good use of color.
- Easy to clip into a management document.
- Only the 50% exceedance shown.

Aug 31, 2005

Date

Use of GIS Features

Muted background emphasizes non-static data

Color palette and symbols tested on color blind viewers

Metadata imbedded on plot

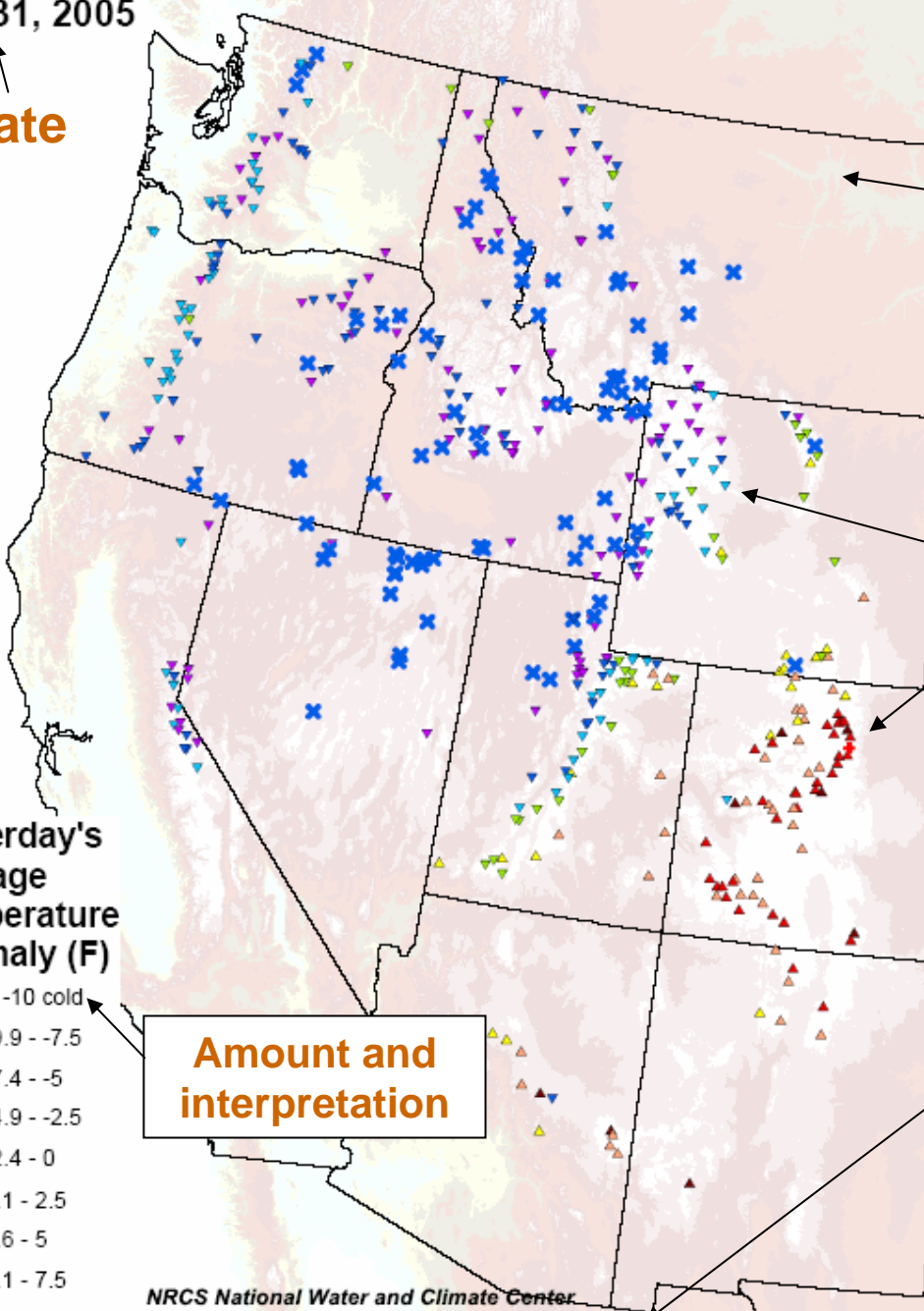
Amount and interpretation

Yesterday's Average Temperature Anomaly (F)

- ✕ < -10 cold
- ▼ -9.9 - -7.5
- ▼ -7.4 - -5
- ▼ -4.9 - -2.5
- ▼ -2.4 - 0
- ▲ 0.1 - 2.5
- ▲ 2.6 - 5
- ▲ 5.1 - 7.5
- ▲ 7.6 - 10
- ▲ > 10 warm

NRCS National Water and Climate Center
SNOTEL Network (Sites with 15 or more years)
Anomaly relative to period of record median
Provisional Data - Subject to Revision

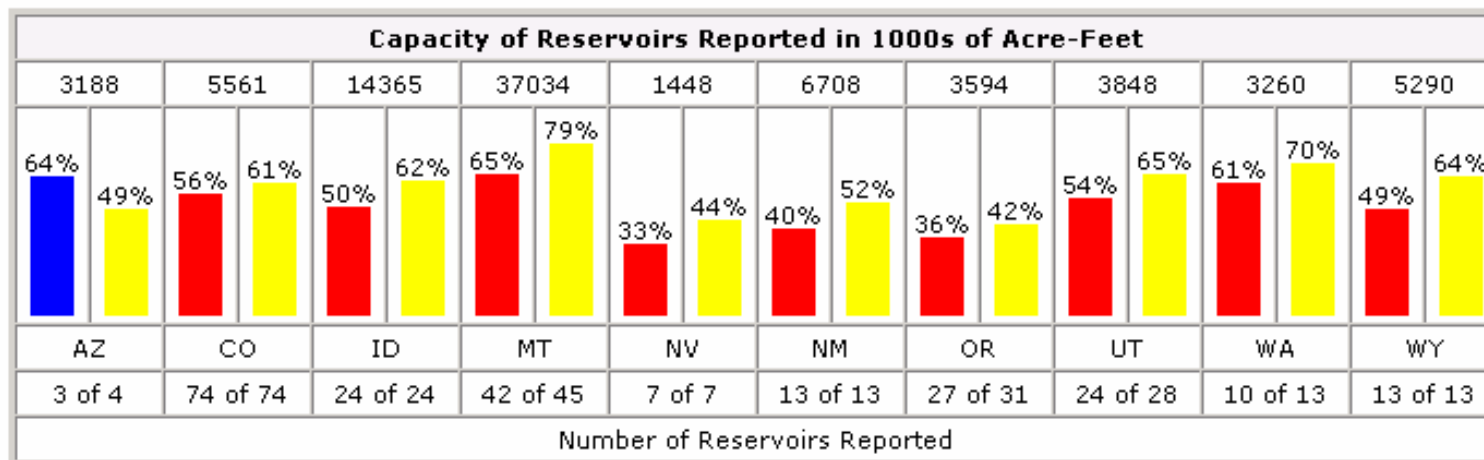
September 2005



Composite Reservoir Summary

Reservoir Storage as Percent of Capacity for November 1st, Water Year 2006

(Data are provisional and subject to change)

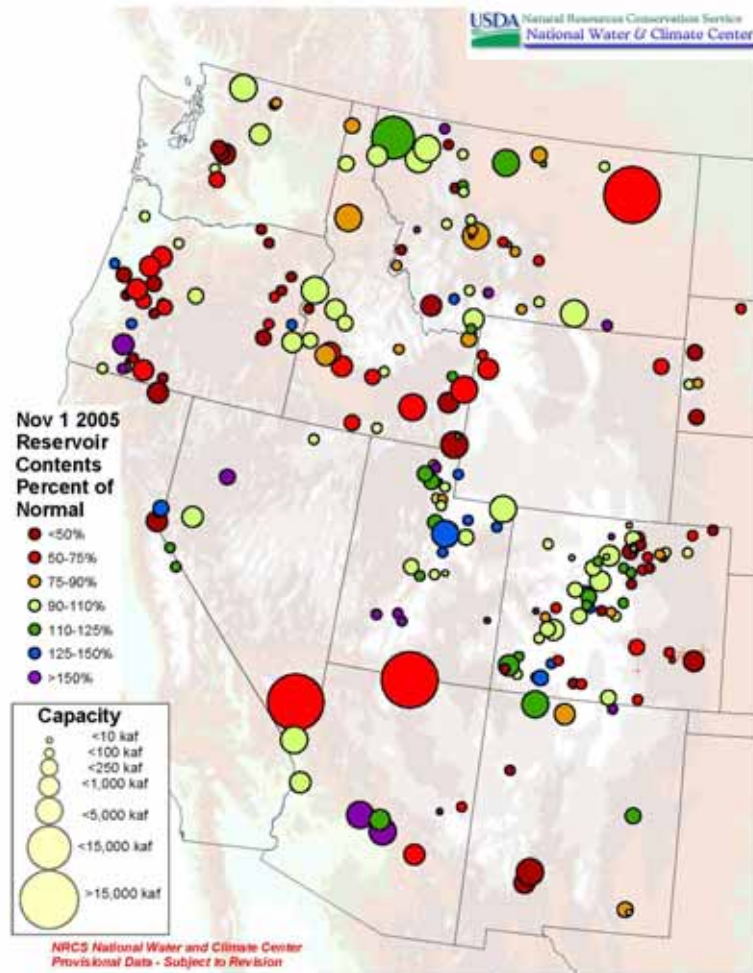


[Select here for the Reservoir Dataset for this Period](#)

- Storage is Below Average (% of Capacity)
- Storage is At or Above Average (% of Capacity)
- Average Storage as % of Capacity

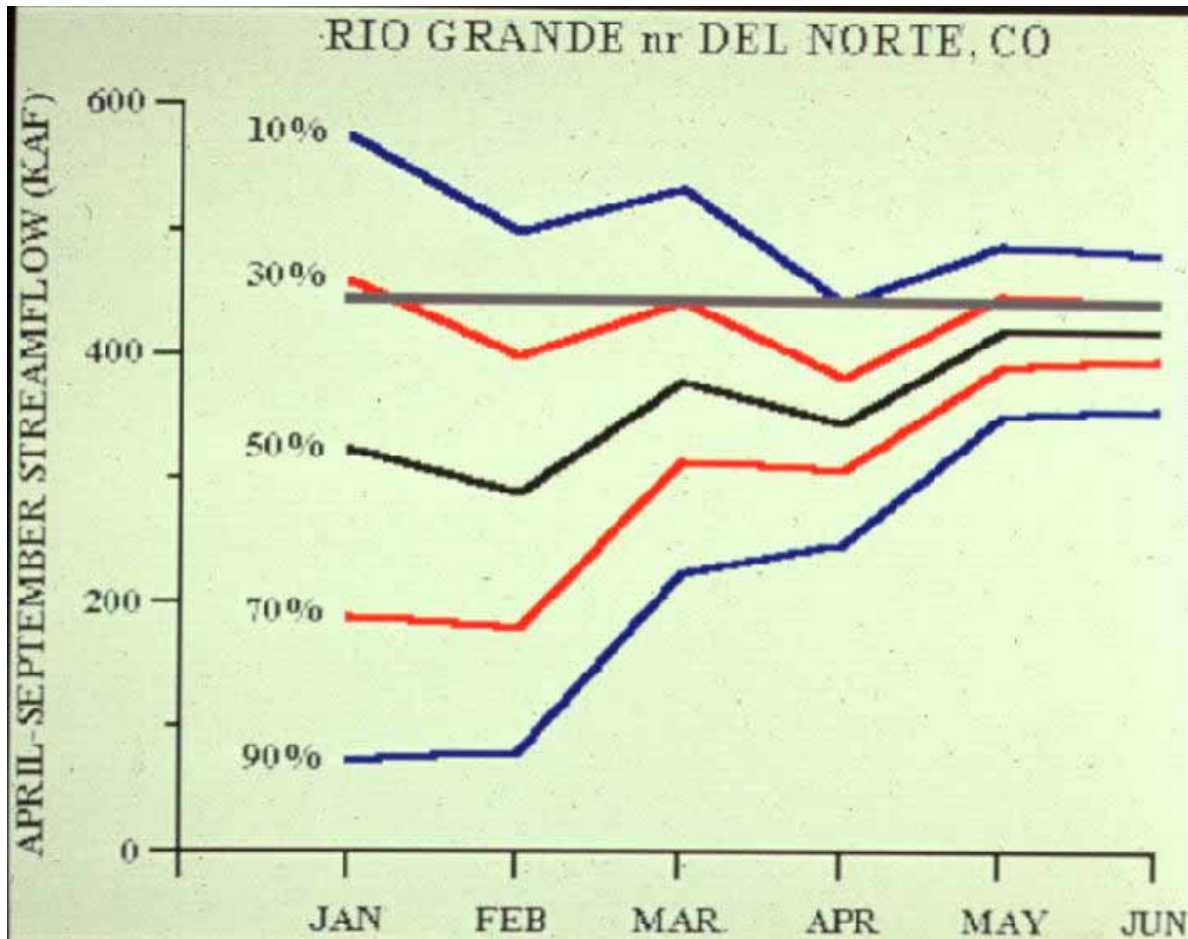
* = Data are not available for this state.

Reservoir Information



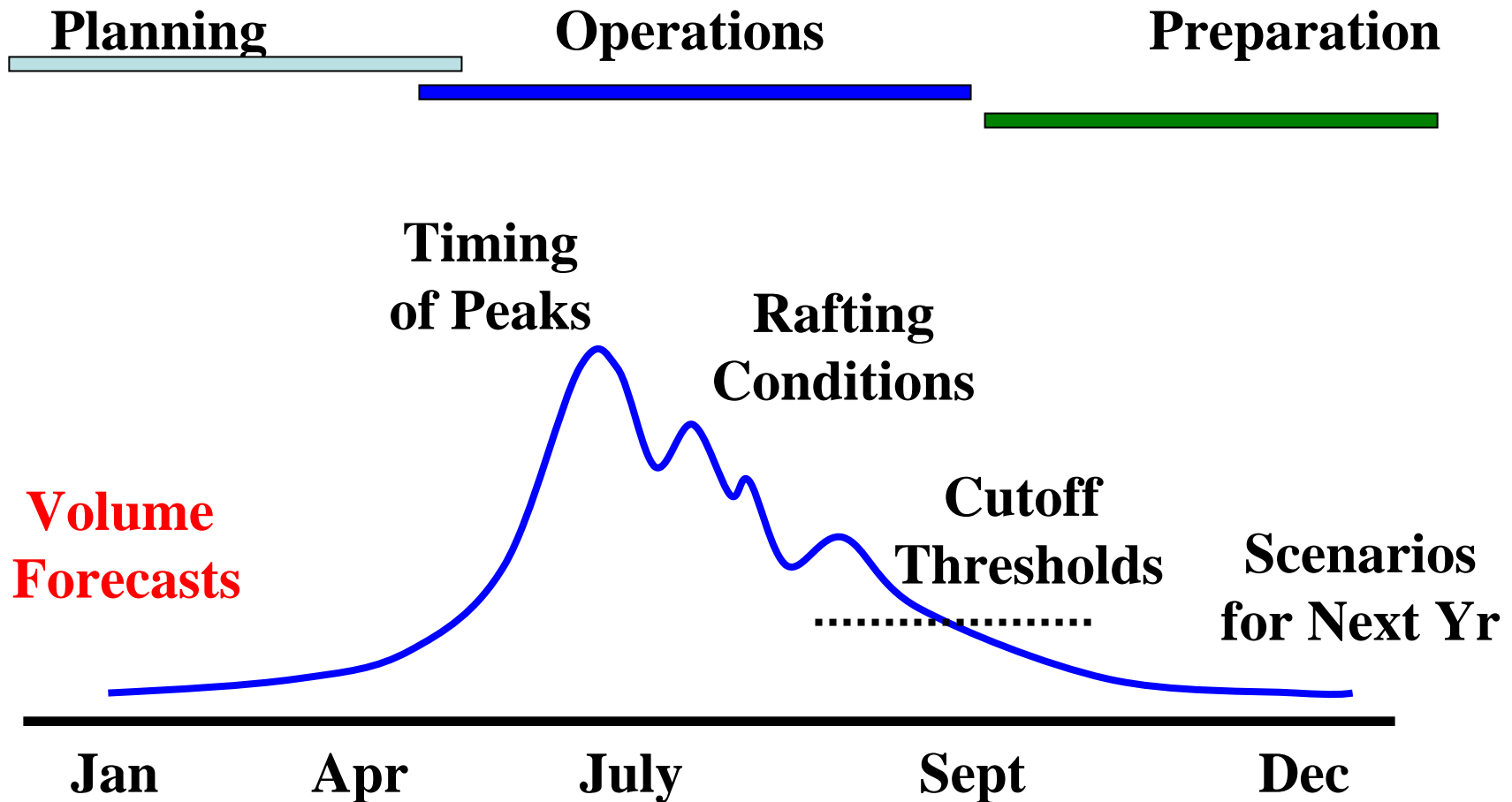
- Provides spatial location of reservoirs.
- Relative size of reservoirs shown.
- Good use of color.
- Easy to clip into a management document.
- Difficult to interpret?

Temporal WSF Information



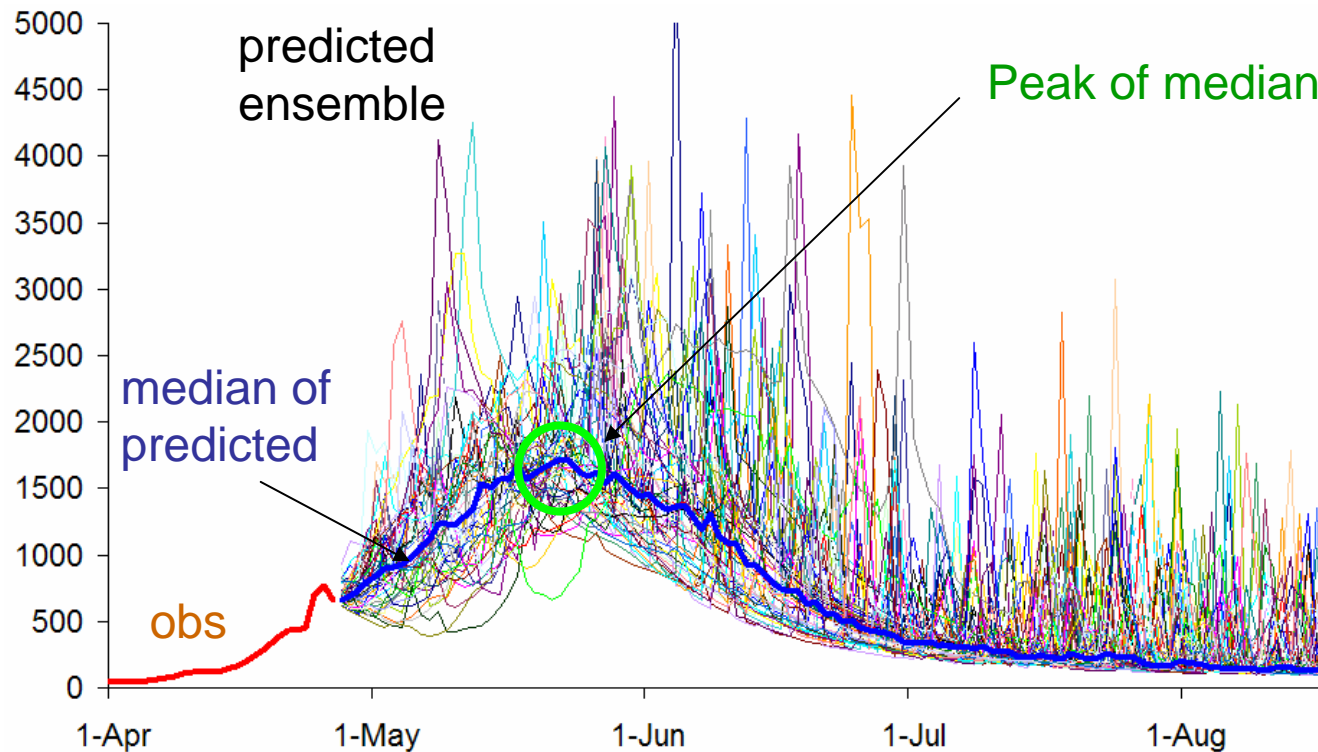
- Provides a indicator of WSF uncertainty as a function of WSF date.
- Too much information?
- Use 9 in 10 terminology instead of 90%?

Temporal User Needs

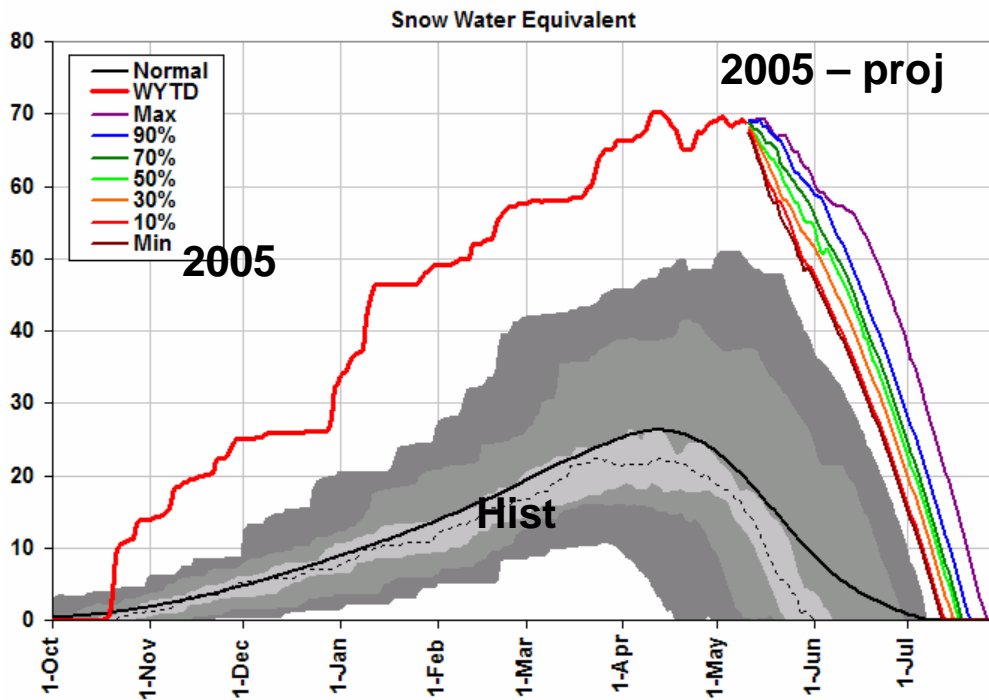


Information Overload?

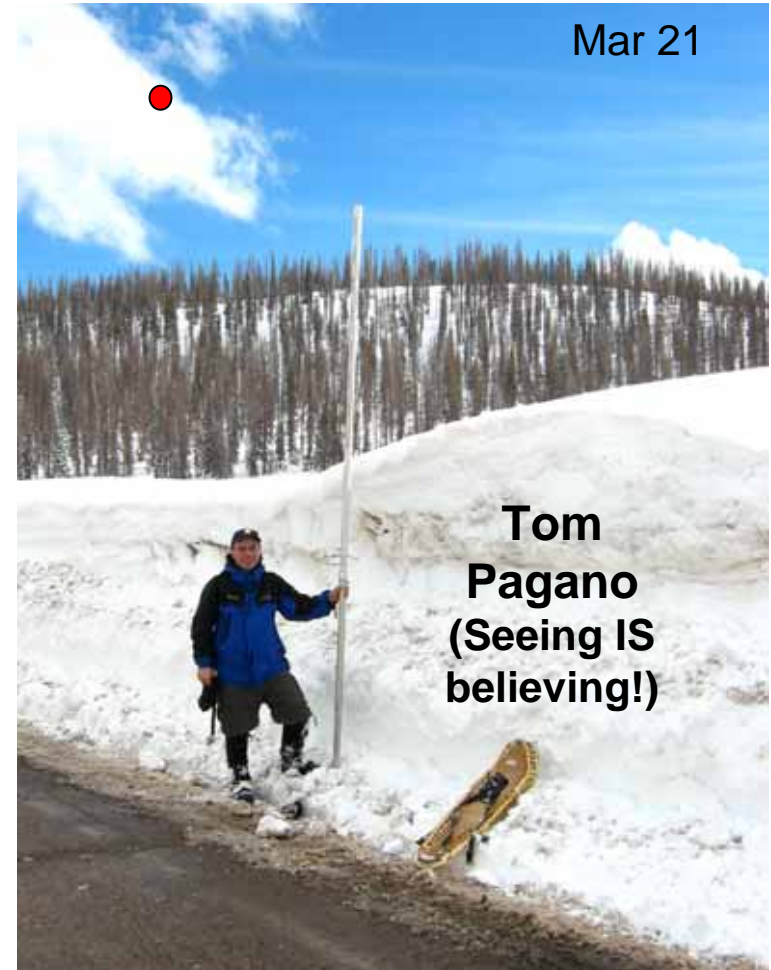
Probability information only getting more complex



Temporal Snowpack Information

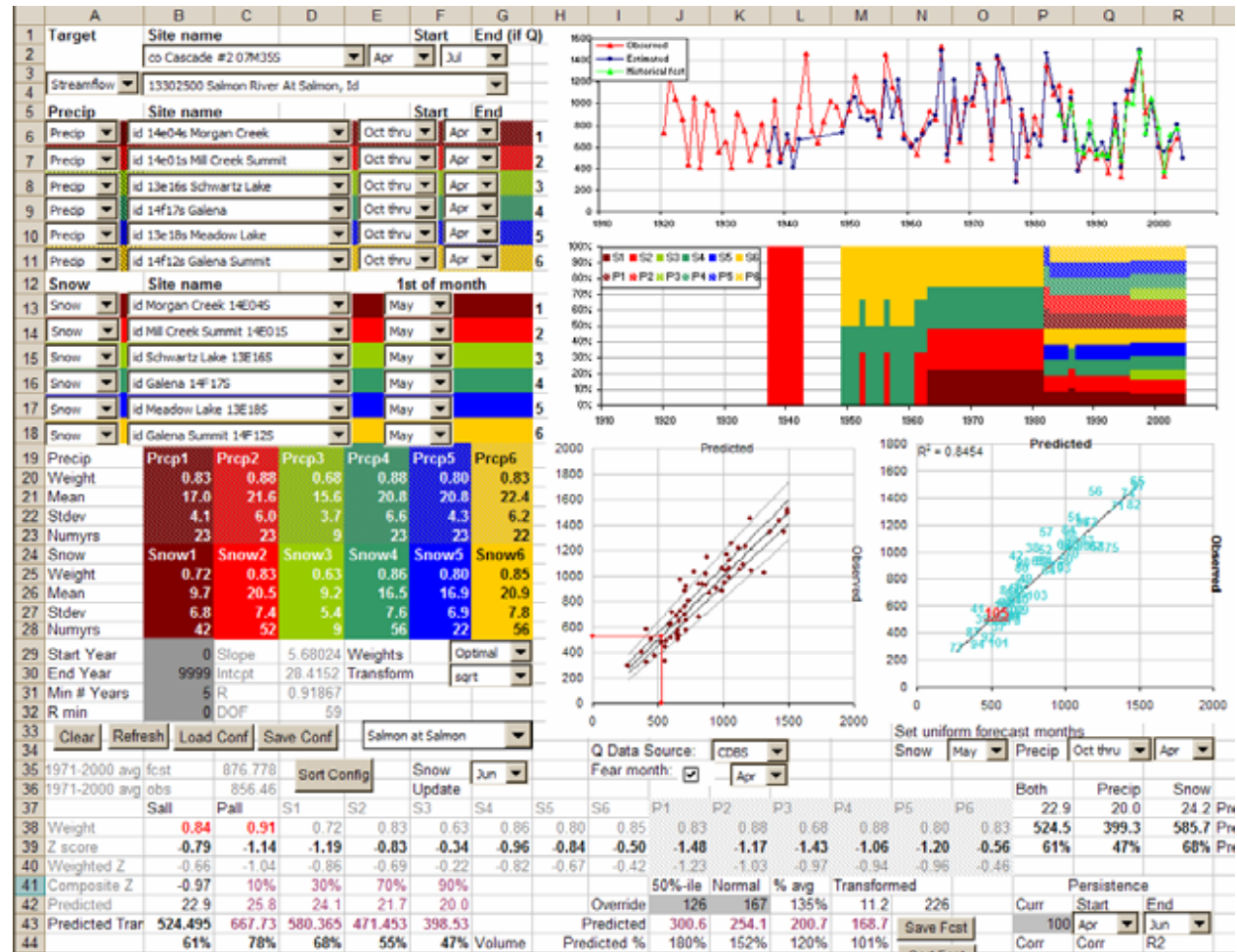


- Complete station history plotted for quick comparison.
- Potential for using history to project future snowpacks.



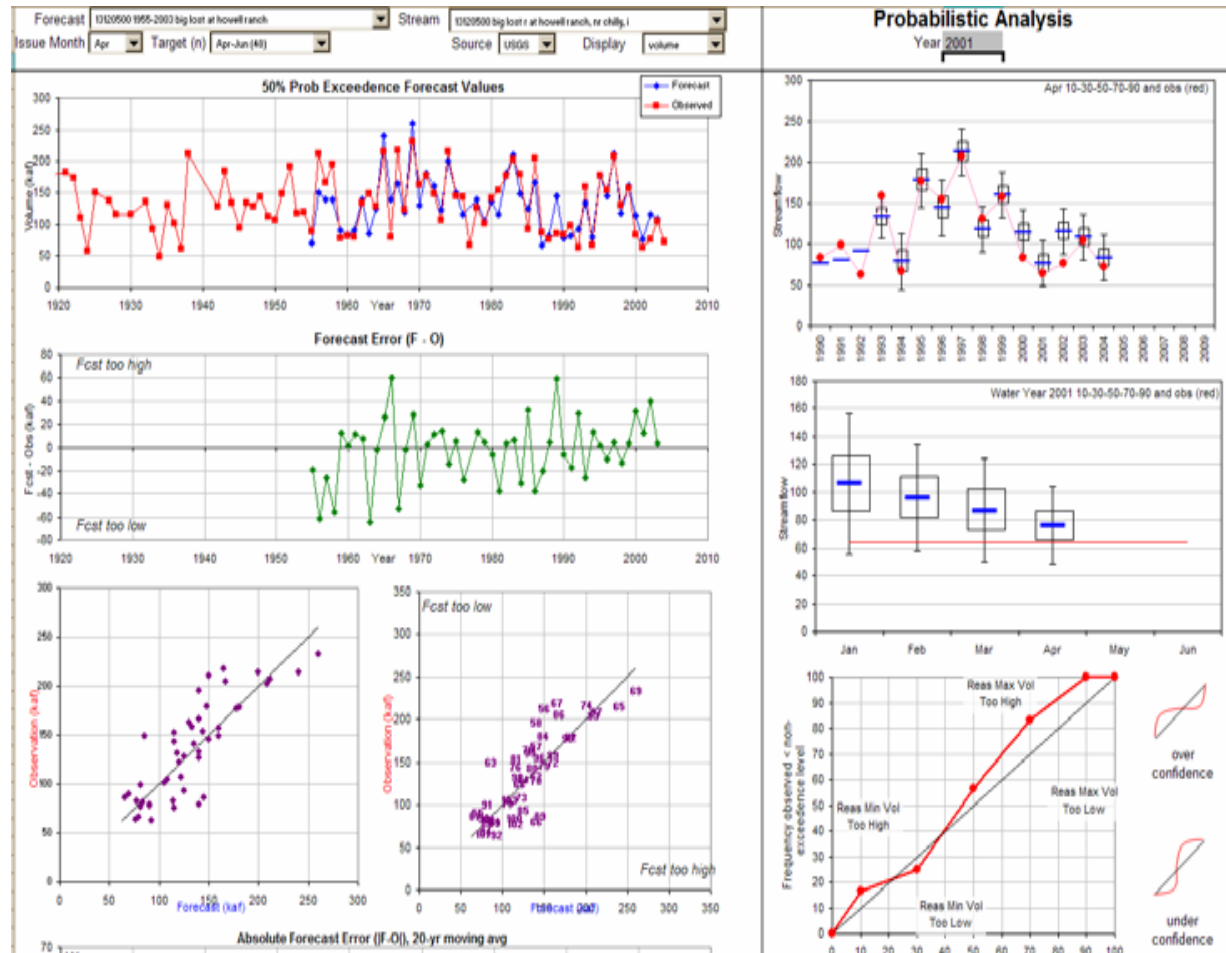
Water Supply Forecast Environment

- Only hydrologists go where angels fear to tread?
- So transparent it may be opaque?



Water Supply Validation Environment

- Can/should this information be part of the public domain?



Webpage Communications

- The data used for the products must be available from the website.
- Webpages need to support some level of user customization – “product buffet line.”
- Understand that probabilities can be used to support customer hedge strategies as appropriate.

Communications Summary

- What are the characteristics of effective communication of science to decision makers?
 - Transparency, but not to opaqueness.
 - Clear description of risk (data used, etc.).
 - Consistency – here today, here tomorrow.
 - Make sure an upgrade IS an upgrade – don't go backwards!
 - Minimize management surprises!

Communications Summary

- What is needed to better sustain a continuing dialogue?
 - We need to use available resources (field representatives, universities, and other federal/state resources) to understand user needs.
 - Willingness to adjust program missions to meet user needs.
- What are examples of successful decision support collaborations that should inform program design?
 - Applied Climate Information System (RCCs/NCDC)
 - Mapping of climate (Oregon State University)
 - Work with RISAs to understand user needs.
 - National Integrated Drought Information System (NIDIS)



Thank You!

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