U.S. Army Corps of Engineers
Albuquerque District

Pecos River Basin Water Operations March Forecast

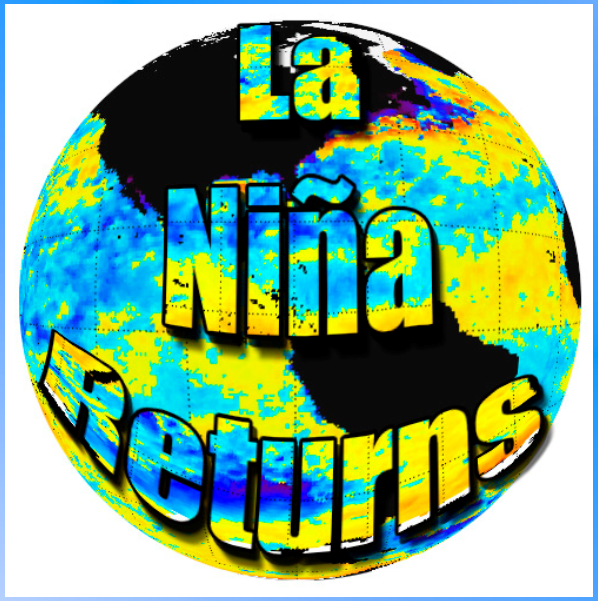
March 12, 2008

Pecos Annual Operation Plan (AOP)
USBR Albuquerque Area Office

U.S. Army Corps of Engineers
Albuquerque District

Topics

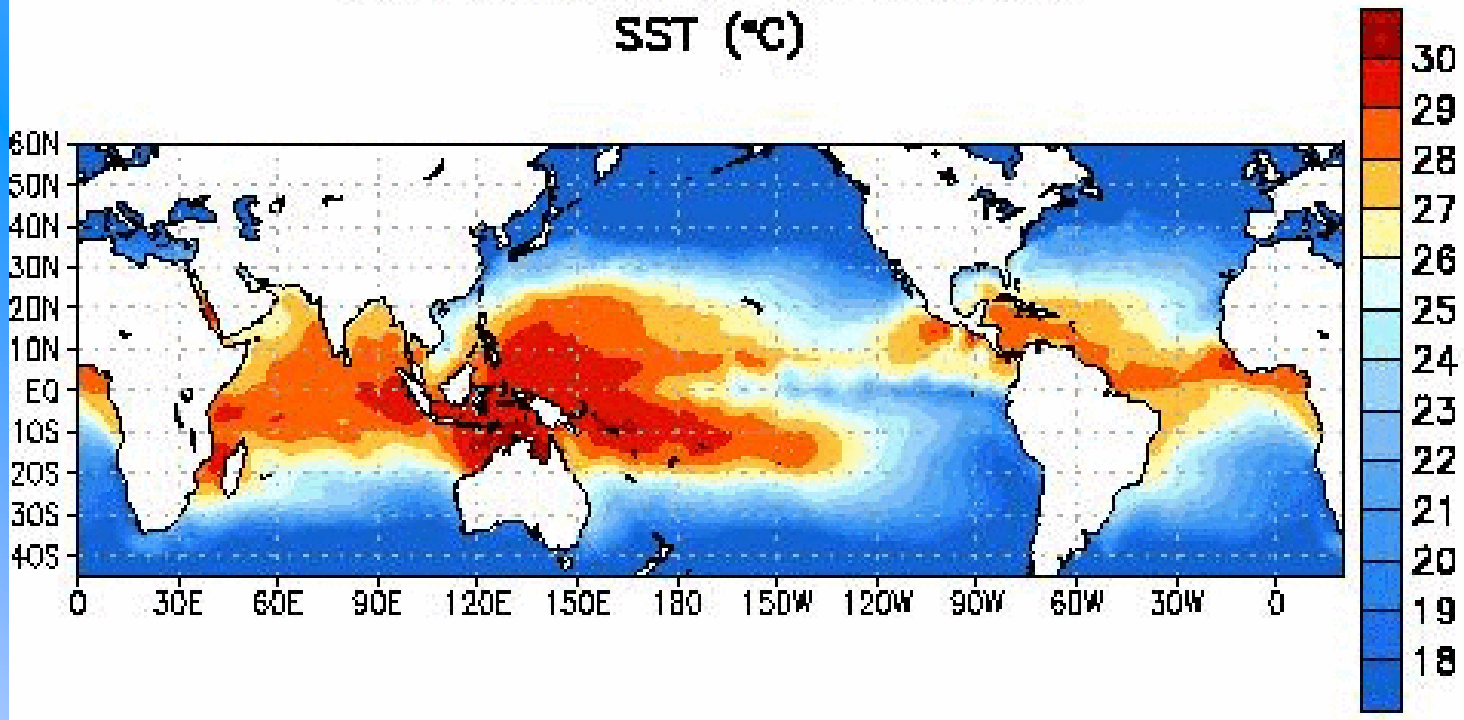
- Climatic Update
- Model Overview
- Input Parameters
- Forecast Reservoir Operations
- Summary of Results
- Discussion



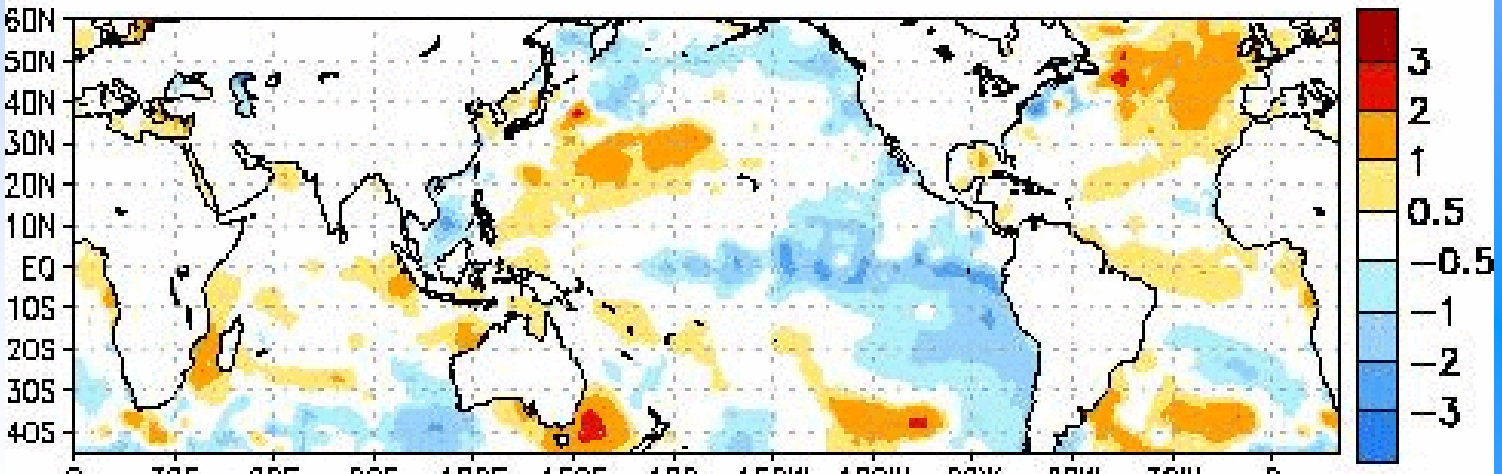
U.S. Army Corps of Engineers
Albuquerque District

Week centered on 05 DEC 2007

SST (°C)

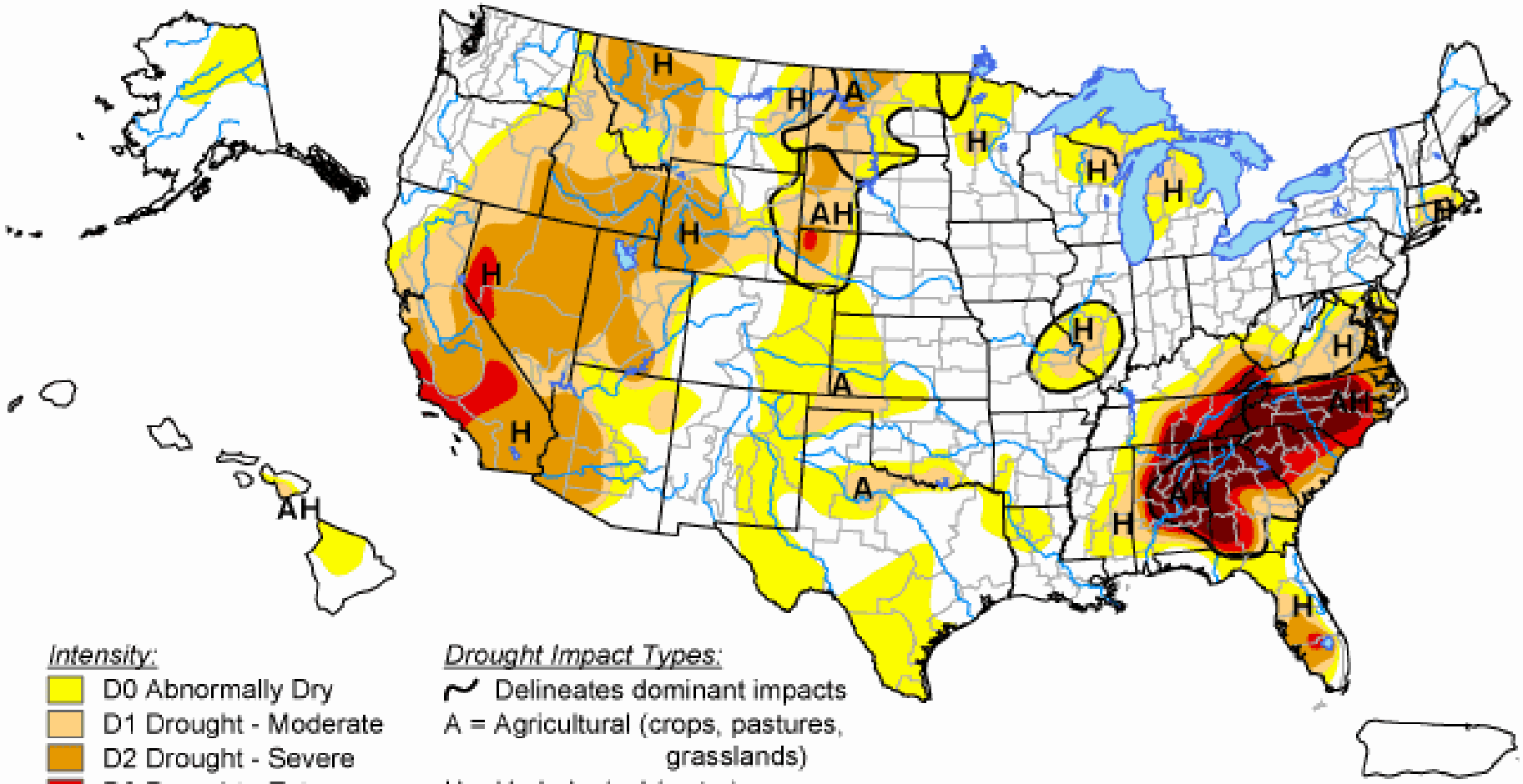


Anomalies (°C)



U.S. Drought Monitor

December 11, 2007
Valid 7 a.m. EST



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

Drought Impact Types:

Delineates dominant impacts
A = Agricultural (crops, pastures, grasslands)
H = Hydrological (water)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://drought.unl.edu/dm

Released Thursday, December 13, 2007

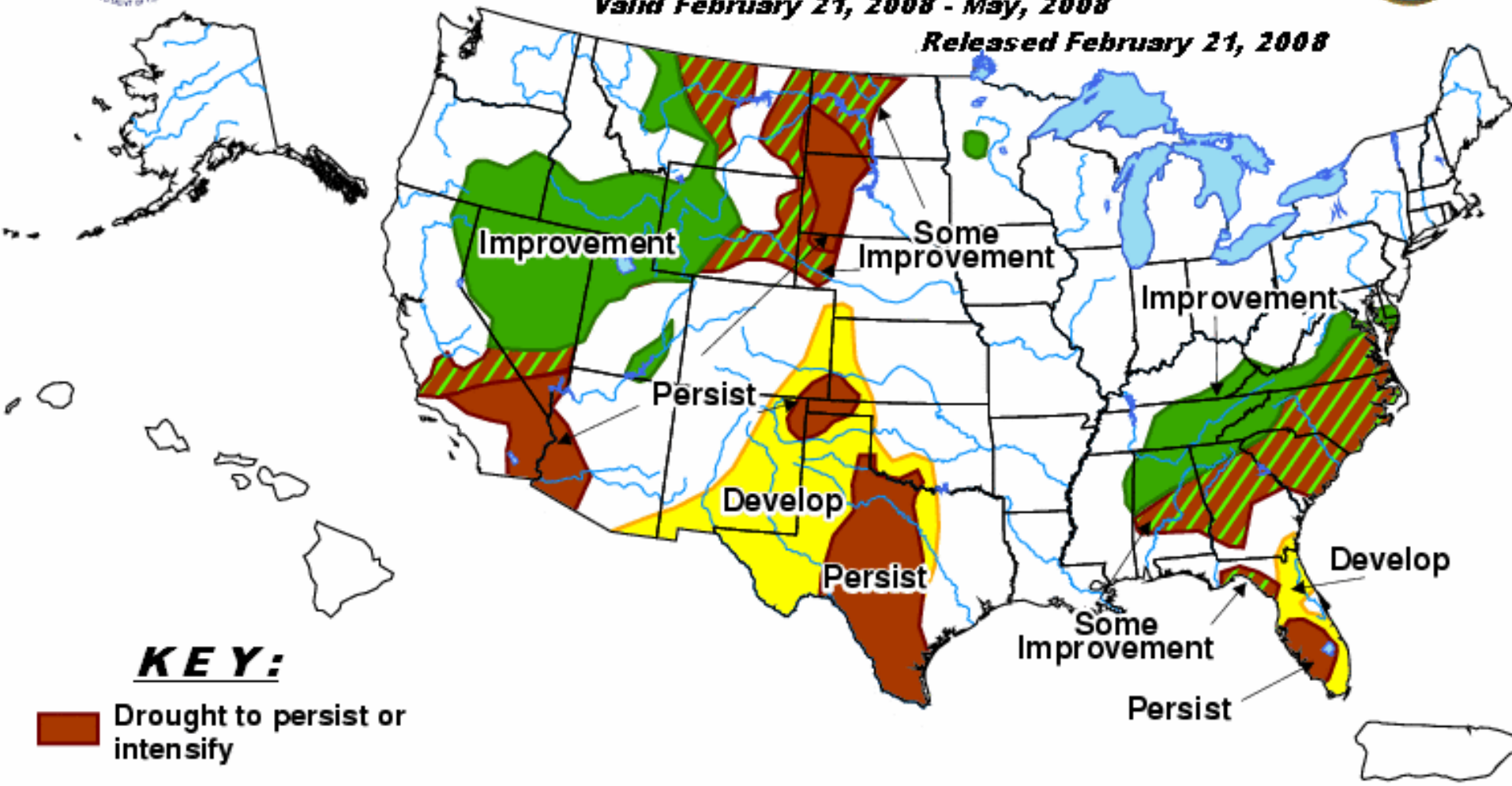
Author: Brian Fuchs, National Drought Mitigation Center

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid February 21, 2008 - May, 2008

Released February 21, 2008

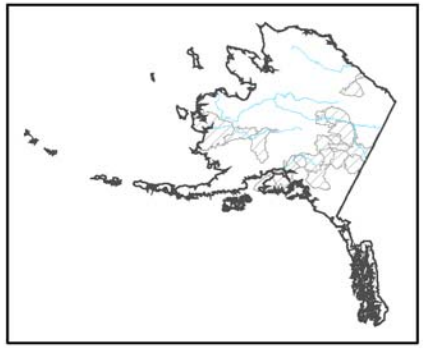


KEY:

- Drought to persist or intensify
- Drought ongoing, some improvement
- Drought likely to improve, impacts ease
- Drought development likely

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

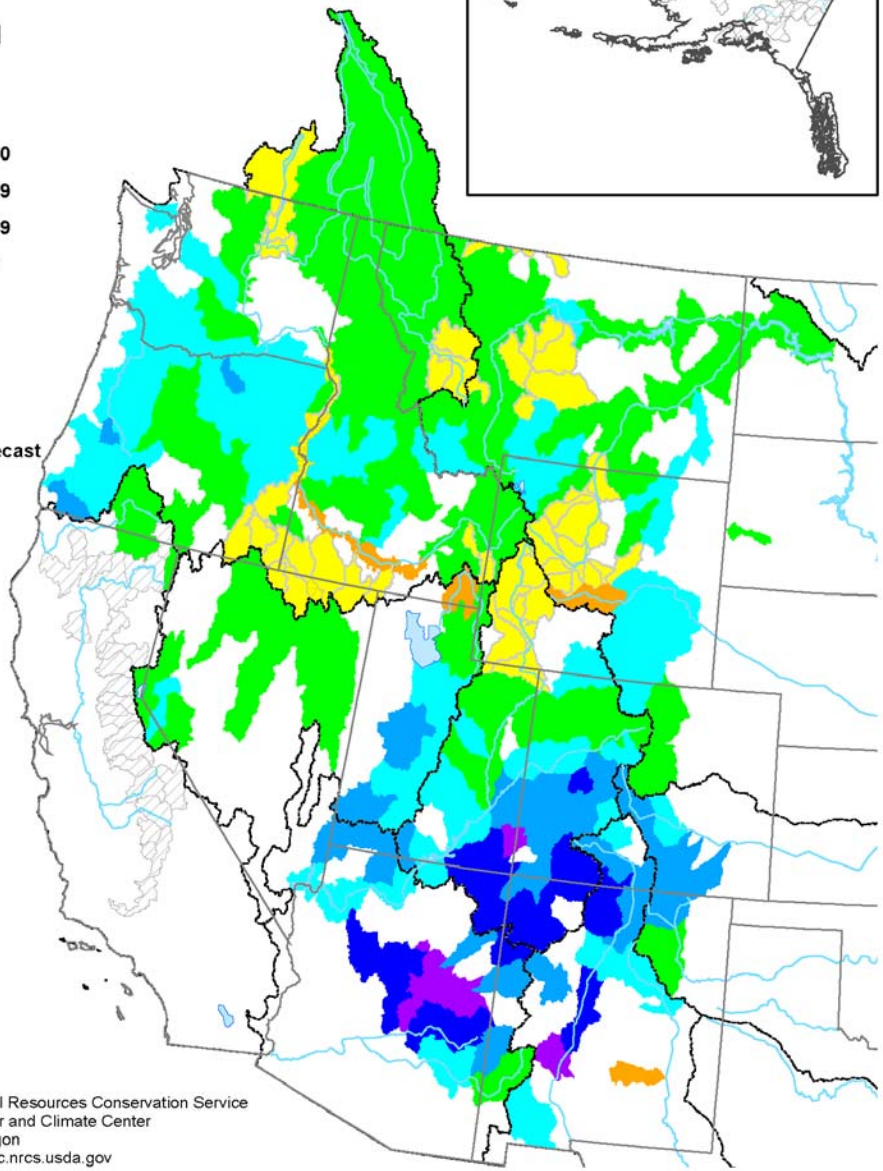
Spring and Summer Streamflow Forecasts as of February 1, 2008



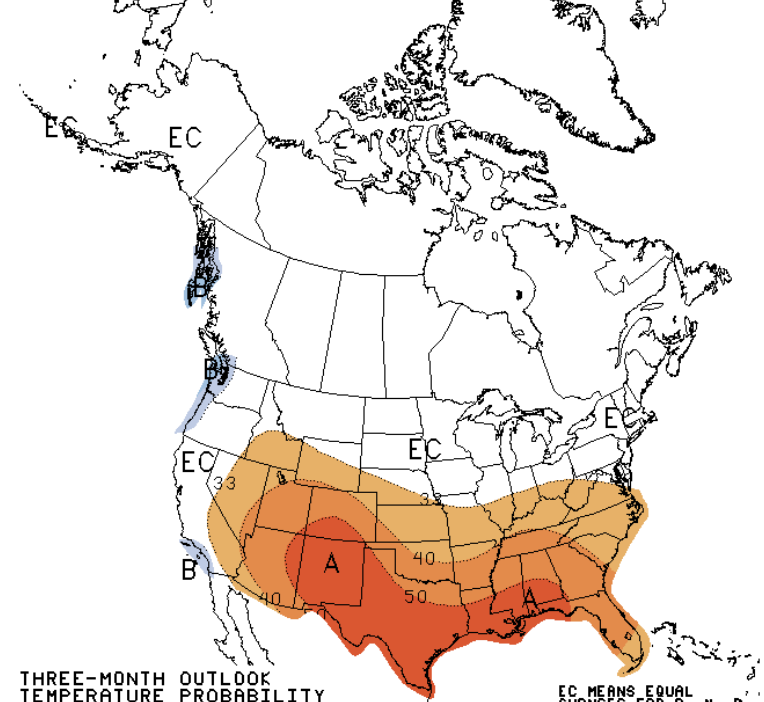
Legend

percent

- > 180
- 150 - 180
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- 25 - 49
- < 25
- No Forecast

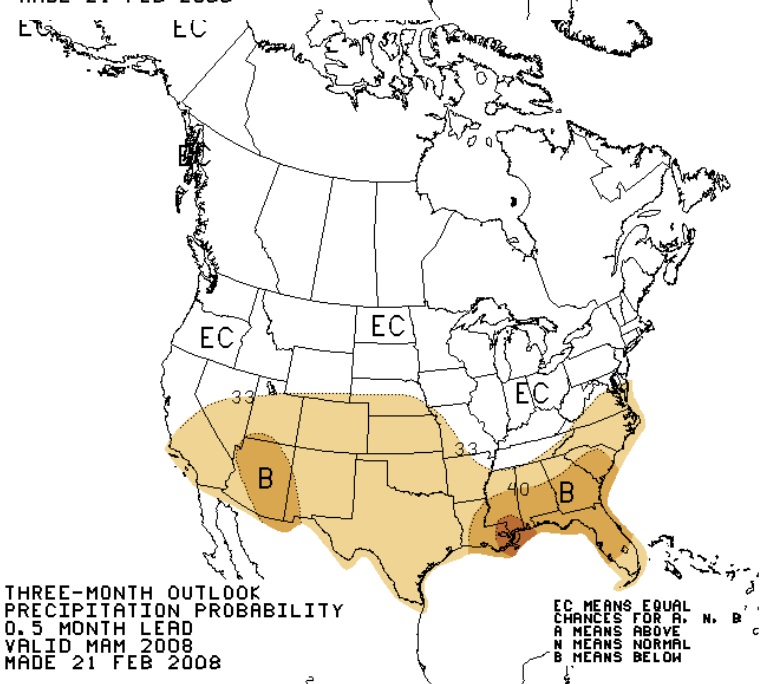


Prepared by
USDA, Natural Resources Conservation Service
National Water and Climate Center
Portland, Oregon
http://www.wcc.nrcs.usda.gov



THREE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
0.5 MONTH LEAD
VALID MAM 2008
MADE 21 FEB 2008

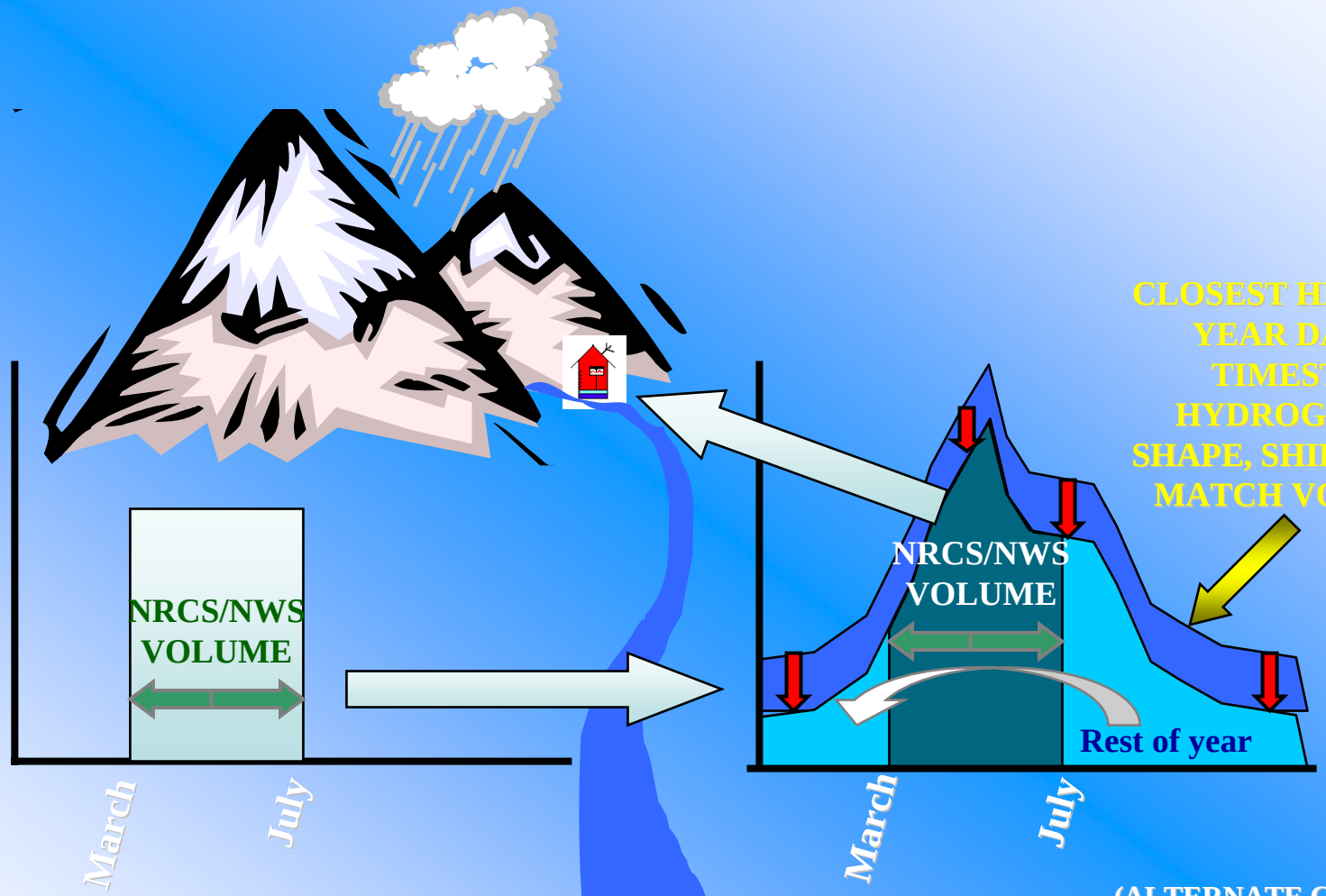
EC MEANS EQUAL
CHANCES FOR A, N, B
A MEANS ABOVE
N MEANS NORMAL
B MEANS BELOW



THREE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
0.5 MONTH LEAD
VALID MAM 2008
MADE 21 FEB 2008

EC MEANS EQUAL
CHANCES FOR A, N, B
A MEANS ABOVE
N MEANS NORMAL
B MEANS BELOW

Using NRCS/NWS Forecasting



CLOSEST HISTORIC YEAR DAILY TIMESTEP HYDROGRAPH SHAPE, SHIFTED TO MATCH VOLUME

NRCS/NWS

(ALTERNATE CHOICES:
-CLOSEST USER-SELECTED # OF YEARS AVERAGED TO FORM A DAILY HYDROGRAPH
-USER SELECTED YEAR(S))

About the Model

- “Hydrology” Model
- Pecos Riverware Model

RiverWare 4.8.1 - PecosForecast.model.2007.January.Hydro.gz

File Control Workspace Policy DMI Accounting Utilities Help

Open Object - InputForecastData

File Edit View Slot Account

Object Name: InputForecastData

Slots | Methods | Accounts

February 29, 2008

Slot Name	Value	Units
Forecasts		
NumberOfYears		
StartDay		
BlendingRatio		
NumberOfYearsPreForecast		
NumberOfYearsPostForecast		
PreForecastRatio		
PostForecastRatio		
ForecastRatio		
InitializationSwitch		
UserInputSimilarYears		
PreForecastUserInputSimilarYears		
PostForecastUserInputSimilarYears		

RBS Ruleset Editor - "pecosforecast...

File Edit Ruleset View

Name: V:\l4ecemam\pecosforecast.ruleset.gz RPL Set Loaded

Name

- SummingRules
- Blended Hydrographs
- PostForecast
- NRCSForecastPeriod
- PreForecast
- SetClosestYears
- ComputeAndDistributeForecasts
- Date Functions

DMI Manager

File Edit Group DMI Utilities

DMIs and Groups

- O OutputForWaterOps
- I UpdateHistoricalData
- I UpdatePointInflow

InputForecastData.Forecasts

File Edit View Adjust

Forecasts

Value:

	January 1000 acre-feet	February 1000 acre-feet	March 1000 acre-feet	April 1000 acre-feet	May 1000 acre-feet	June 1000 acre-feet	July 1000 acre-feet
0: GallinasCreekNrMontezu	NaN	NaN	12.00	NaN	NaN	NaN	NaN
1: PecosRiverNrPecos	NaN	NaN	73.00	NaN	NaN	NaN	NaN
2: PecosRiverNrAntonChico	NaN	NaN	80.00	NaN	NaN	NaN	NaN
3: SantaRosaLakeInflow	NaN	NaN	66.00	NaN	NaN	NaN	NaN
4: RioRuidosoAtHollywood	NaN	NaN	3.30	NaN	NaN	NaN	NaN

UpperPecosForecastData

UpperPecosPostForecastD

GallinasCreekNrMontezu

PecosRiverNrPecos

PecosRiverNrAntonCl

SantaRosaLakeInfl

RioRuidosoAtHollywo

RuleHasFired

Objects

About the Model

- “Hydrology” Model
- Pecos Riverware Model

RiverWare 4.8.1 - PecosForecast.model.2007.January.gz

File Control Workspace Policy DMI Accounting Utilities Help

RBS Ruleset Editor - "pecos.waterops.ruleset.2006.gz"

File Edit Ruleset View

Name: V:\l4ecemam\pecos.waterops.ruleset.2006.gz RPL Set Loaded

Name	Priority	On	Type
Preparatory Rules		✔	Poli...
Diversion Rules		✔	Poli...
Santa Rosa Rules		✔	Poli...
Sumner Rules		✔	Poli...
Brantley Rules		✔	Poli...
Avalon Rules		✔	Poli...
General Functions		✔	Util...
General Boolean Functions		✔	Util...
CID Diversion Functions		✔	Util...
FSID Diversion Functions		✔	Util...
Get Data Functions		✔	Util...
Date Functions		✔	Util...
Tcl Functions		✔	Util...
List Functions		✔	Util...
Flood Control Functions		✔	Util...
Conservation Storage Functions		✔	Util...

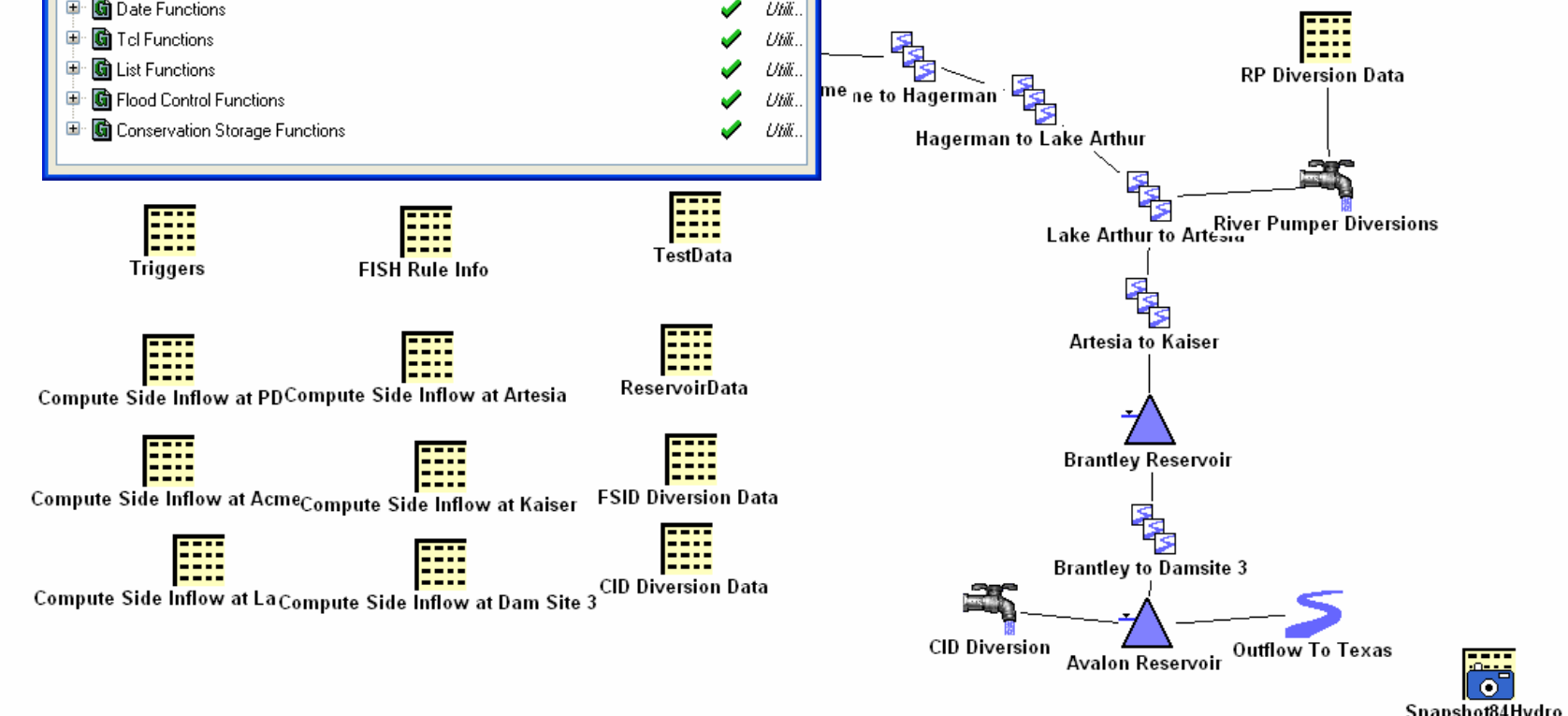
DMI Manager

File Edit Group DMI Utilities

DMIs and Groups

- InputData
- InputForecastData
- InputInitialData

Objects



Input Parameters

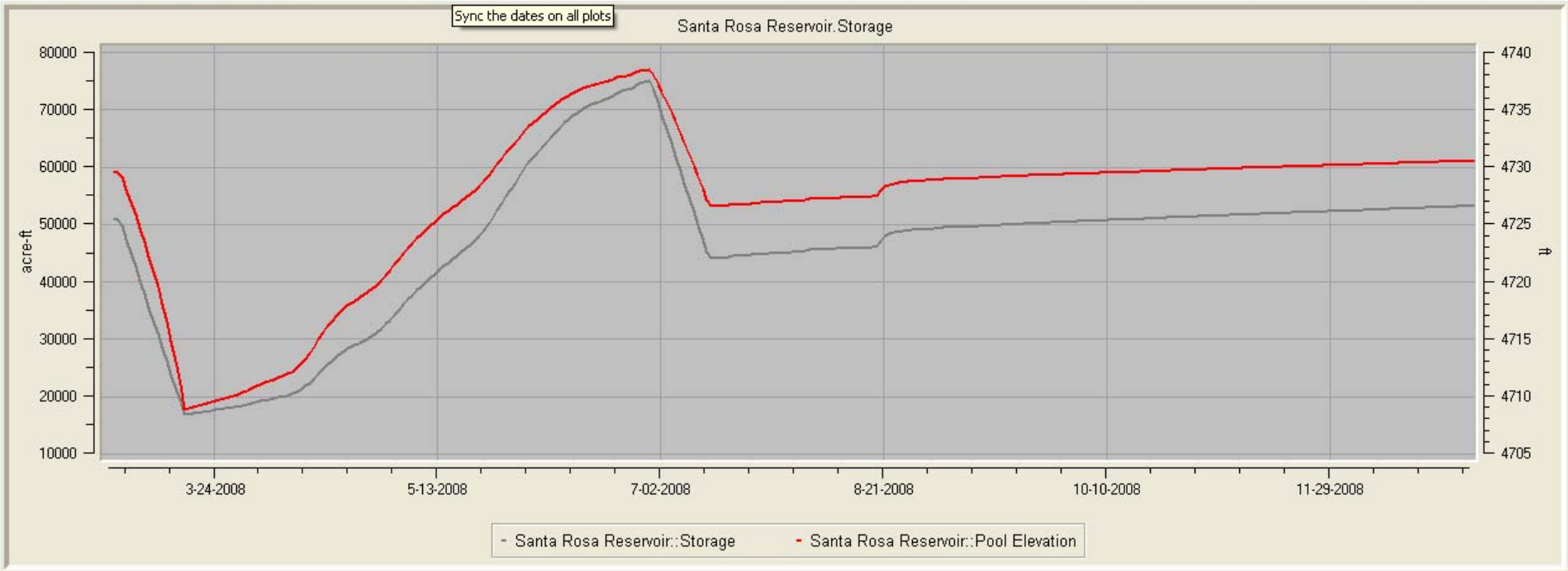
- NRCS – Pecos River Basin Streamflow Forecasts – March 1, 2007
  - 50% Exceedance Mar-Jul
    - Gallinas Creek nr Montezuma
    - Pecos River nr Pecos
    - Pecos River nr Anton Chico
    - Santa Rosa Lake Inflow
    - Rio Ruidoso at Hollywood
- Various “Initial” Values
- CID allotment of “2.5”
- 2008 Maximum Conservation Storages
- Rule/Input “tweaking”

Plot - SantaRosaOpsPC

File Edit Graph Data Window

March 1, 2008

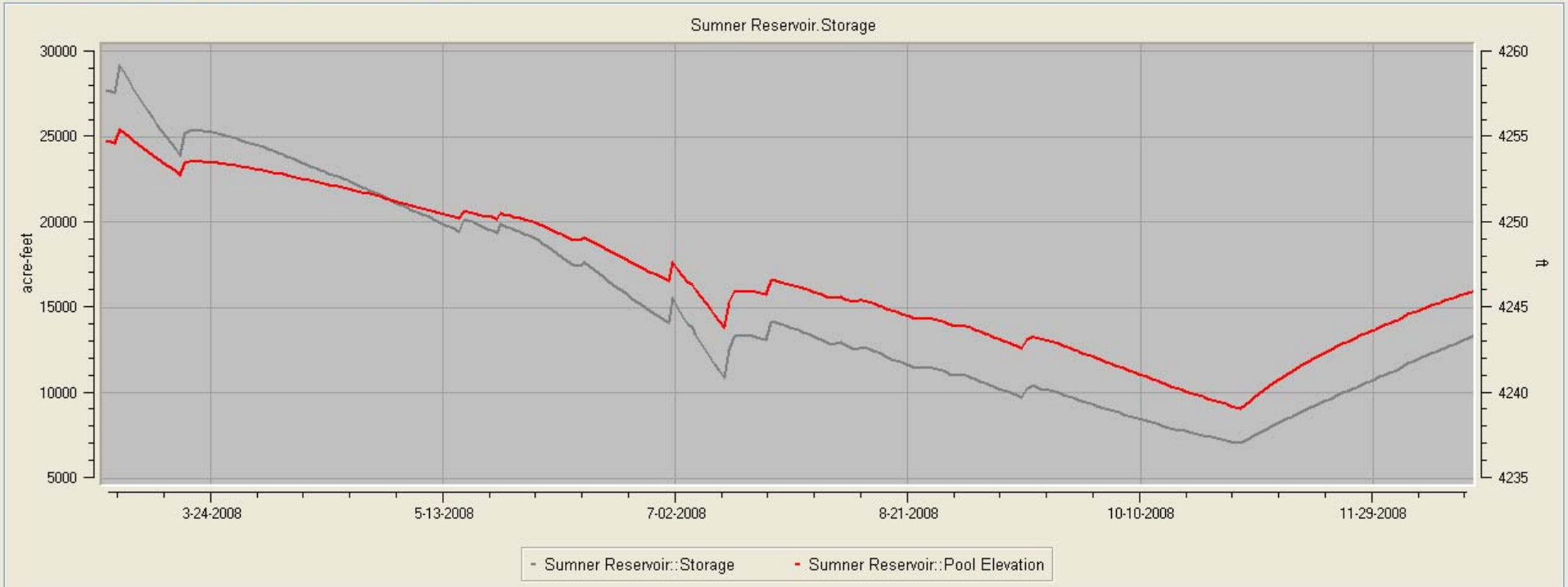
Sync the dates on all plots

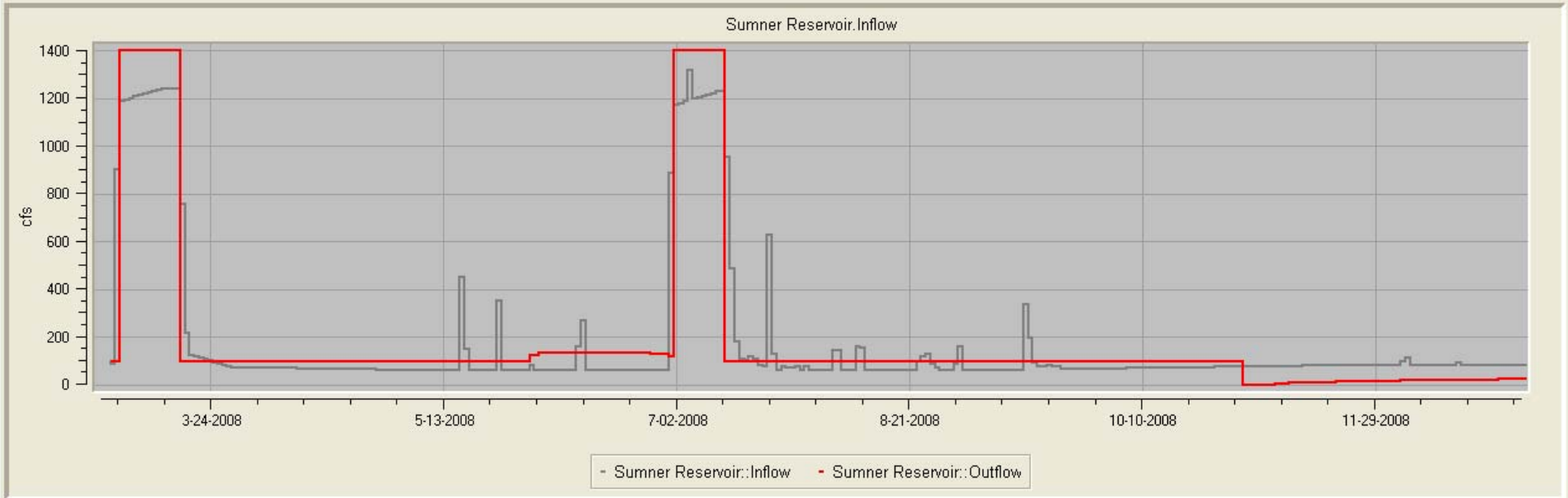


Plot - SumnerOpsPC

File Edit Graph Data Window

March 1, 2008

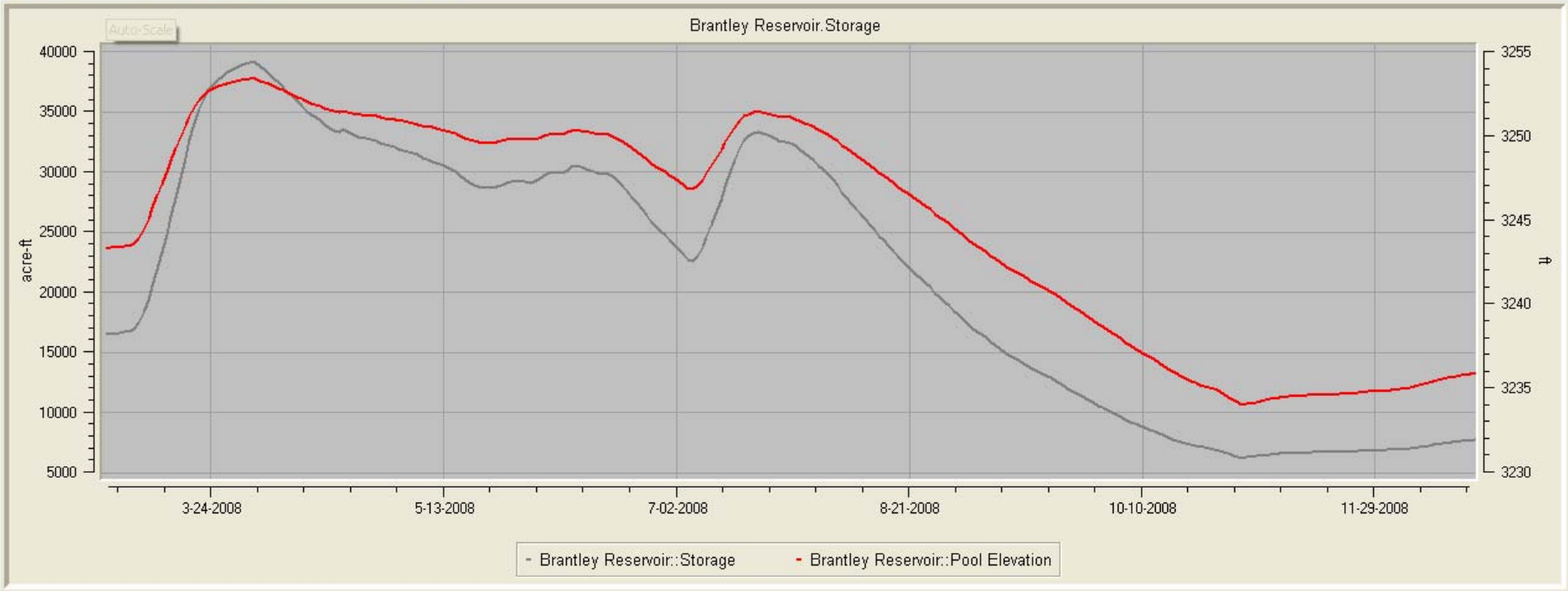


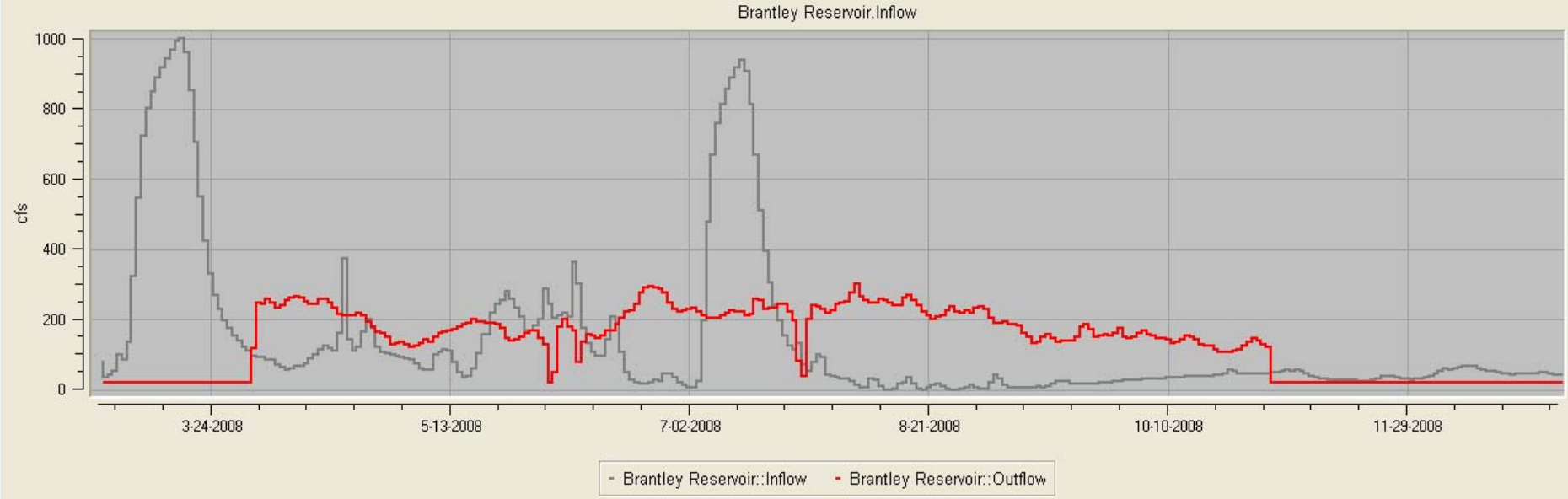


Plot - BrantleyOpsPC

File Edit Graph Data Window

March 1, 2008





Summary of Results

- Peak Forecasted Project Storage Total
  ~ 117 Kaf - compared to 148 Kaf last year (155 Kaf forecast)
- Santa Rosa peak conservation storage ~ 75 Kaf
- First block release already running
- Second block release likely around July 4th Holiday
- Will there be a 3rd block release?
  – Conservation measures for next year?
- Hope for Monsoon Rains…

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Discussion …