NWRFC Verification Program

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NOAA NWS ~ NORTHWEST RIVER FORECAST CENTER

“Meaningful” Verification

The NWRFC is committed to performing “meaningful” Hydro-meteorological Verification

Meaningful Verification will help us to answer the following questions:

- **How good are your forecasts?**
- **Are you improving?**
- **Why did you miss that forecast?**
- **What are your biggest sources of error?**
- **In general, which basin forecasts are your most/least reliable?**
- **Where should we apply our available resources to most effectively improve our forecasts?**

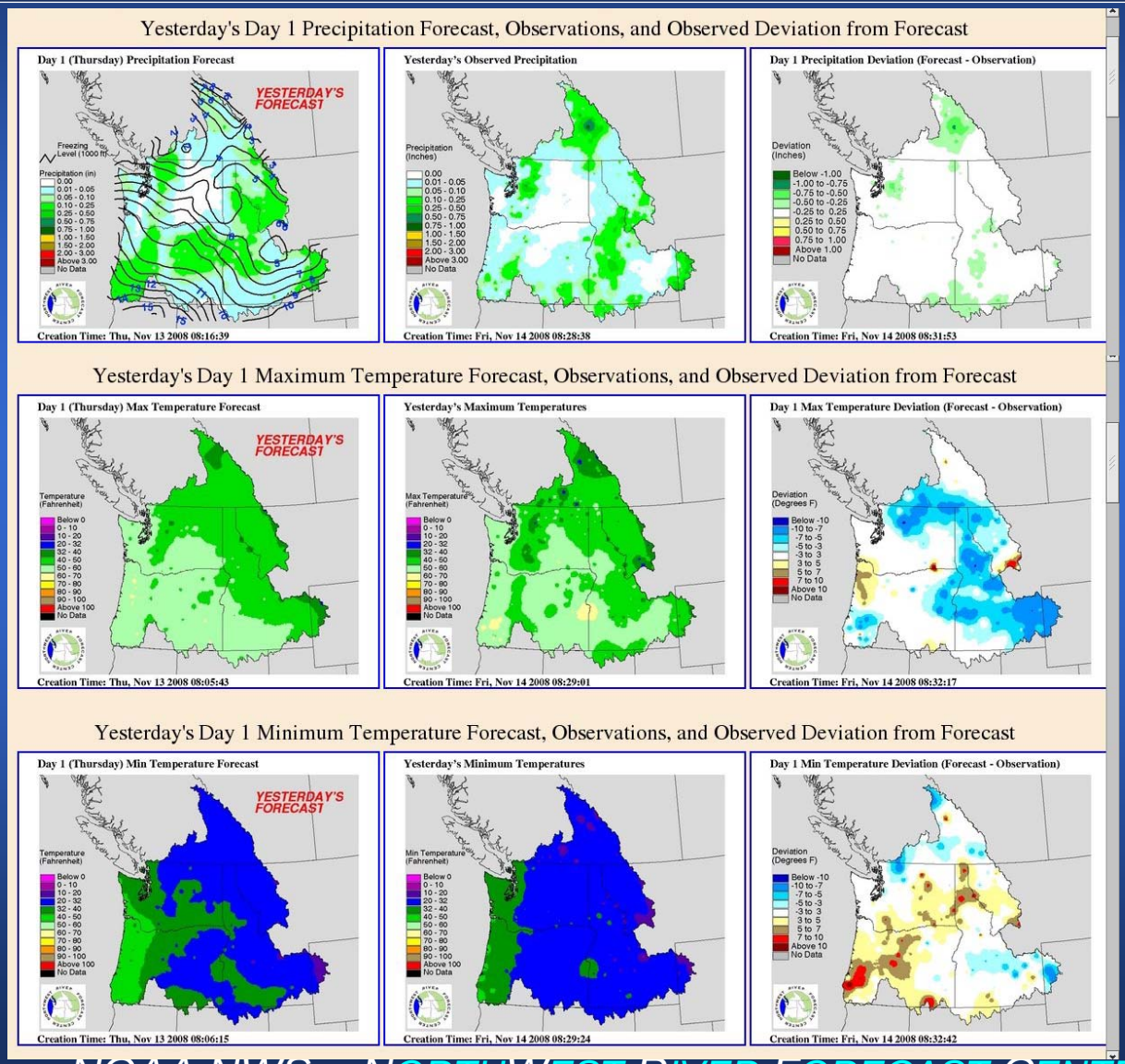
Goal: “Meaningful” Verification

1. **Save Everything!**
   - Storage: Archive DB, Flatfiles, etc.
   - Disaggregate and save forecast “pieces” - Obs data, operational OFS Files, forecast inputs, final forecasts, etc.)
2. **Perform Regular Analysis**
   - Qualitative and Quantitative (IVP, IFP,FAVO, other)
   - monitor trends
   - Identify “persistent” problems
3. **Establish Baseline Statistics**
   - Helps customers establish “confidence levels”
   - Identify “problem” basins
   - Starting point for trend analysis
4. **Use info to Improve Forecasts!**

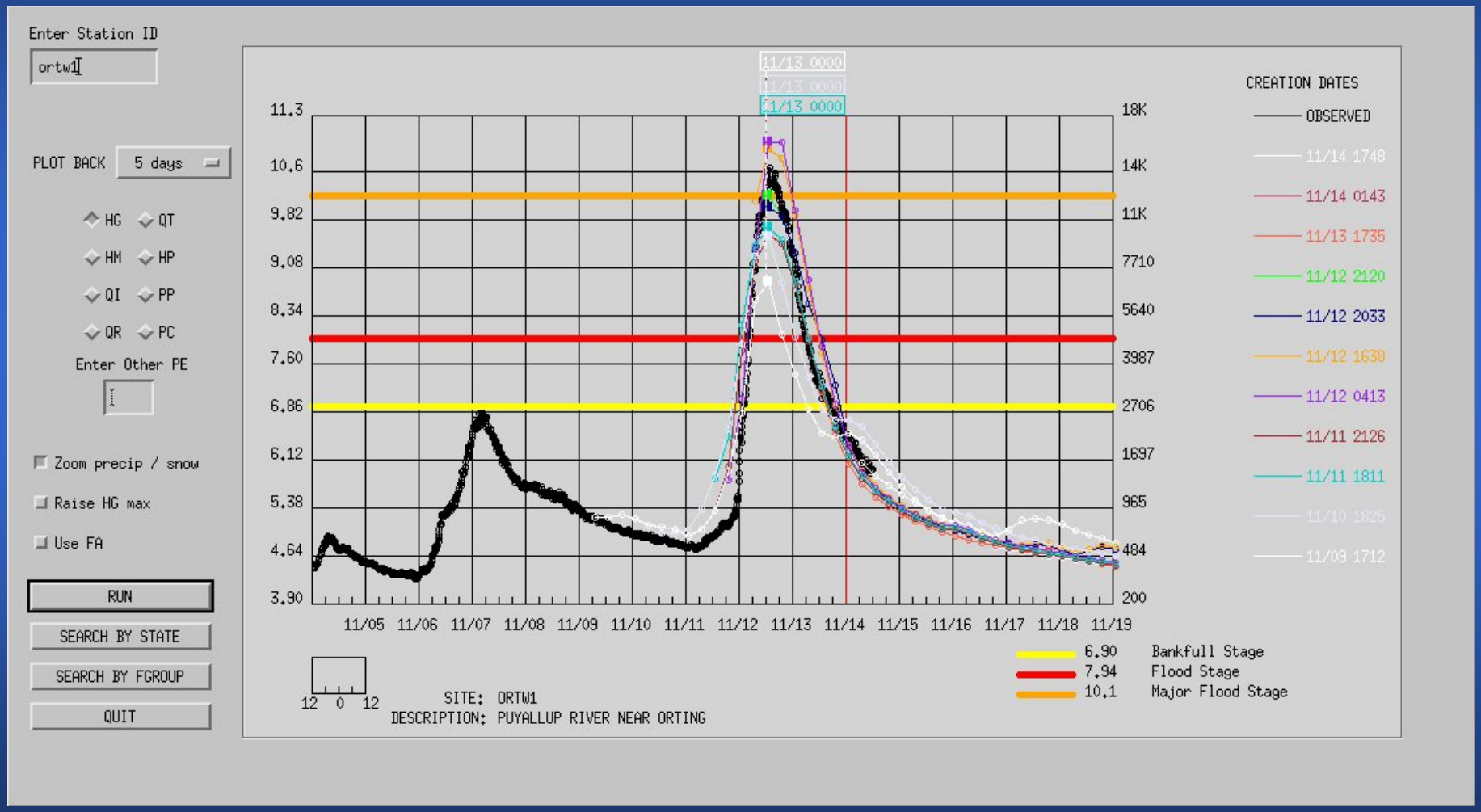
NWRFC Verification – Current Status

- Archive
  - Recent improvements to posting speeds and storage
- National Program
  - National Verification Team, National product
- Regional Program
  - Regional Verification Team- Report recommendations
- Routine Qualitative Verification/Review
  - Web Plots – Daily precip/temp
  - FAVO – review of river forecasts
- Web (Water Supply, ESP)
- Post Event Analysis / Storm Studies

Web Verification – Precip, Temp
(forecast, observed, forecast-observed)



FAVO – Forecast Against Values Observed



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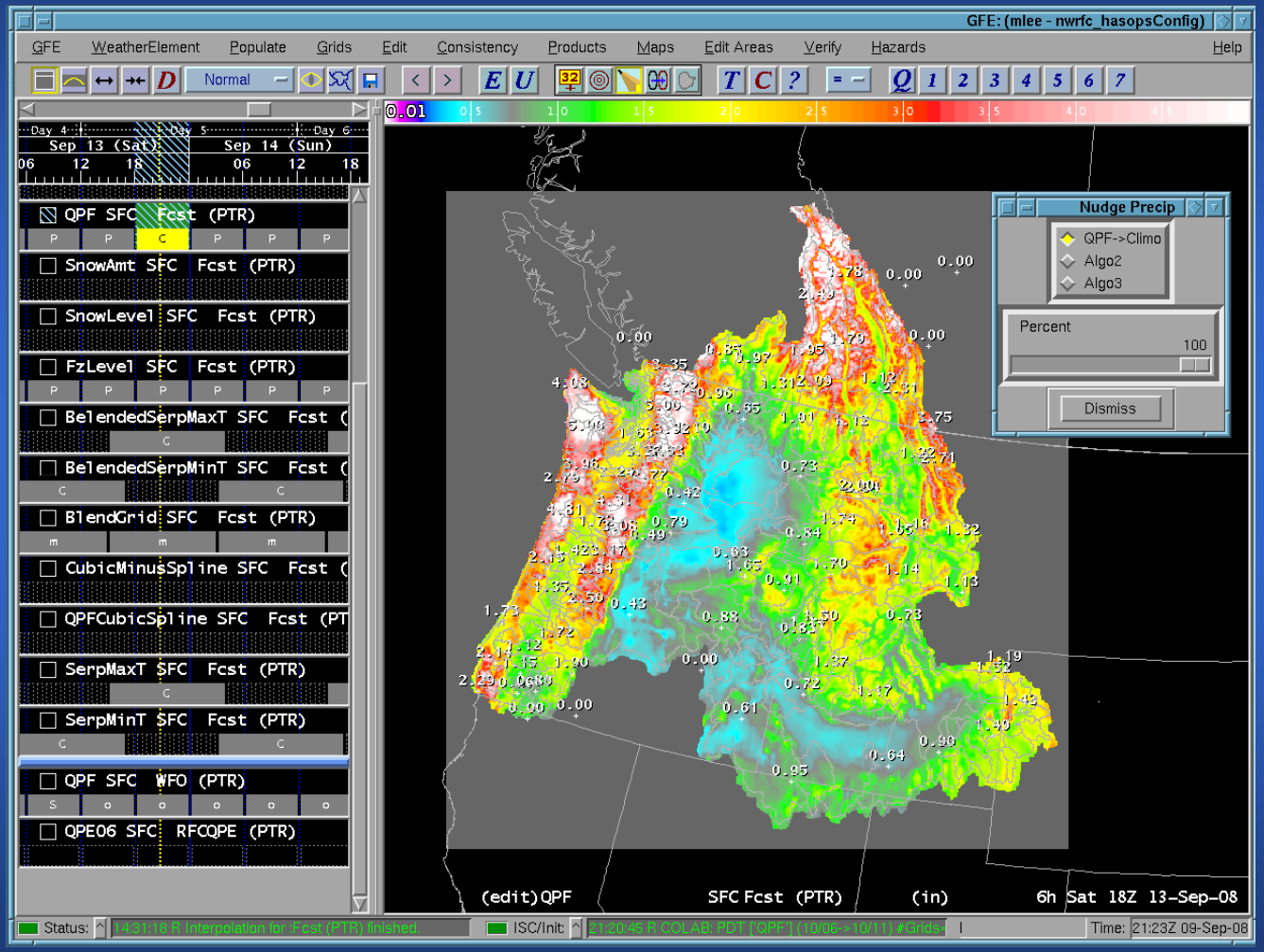
Special Projects (Active)

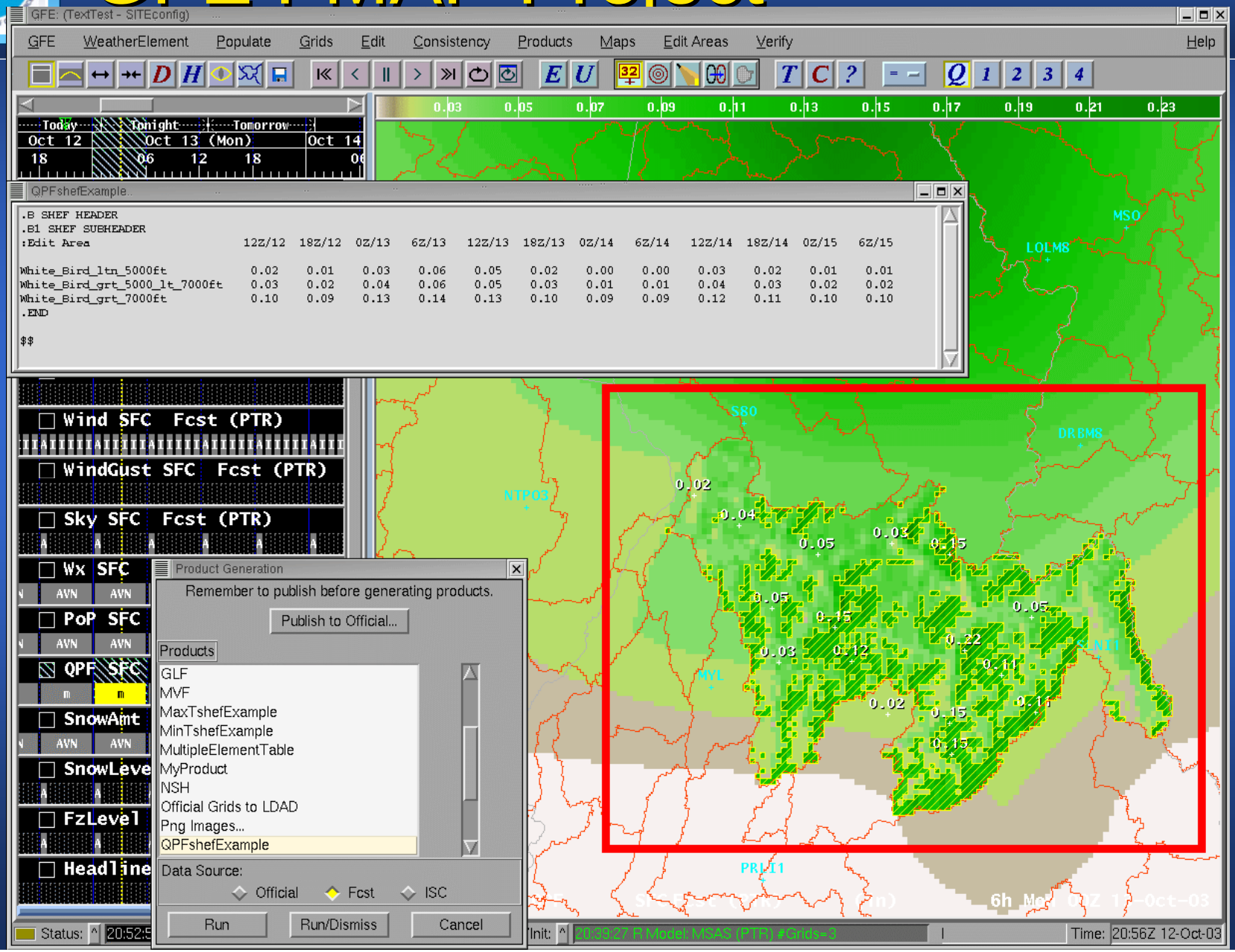
- **Daily QPF Verification IVP Batch pilot project**
- **GFE QPF Comparison (HAS, ISC, HPC, GFS, NAM, EUR)**
- **GFE FMAP (from grids) vs FMAP (from weighted stations)**
- **CHPS 1-hour Gridded Forcings (obs & fcst) – (MPE, GFE, etc.)**

GFE QPF Comparison Project

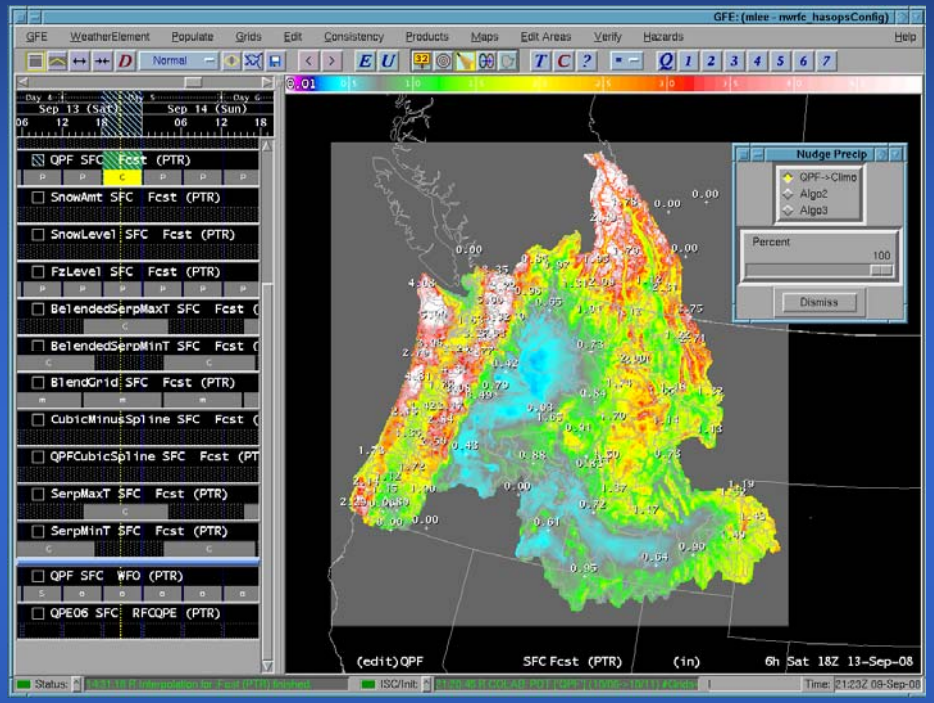


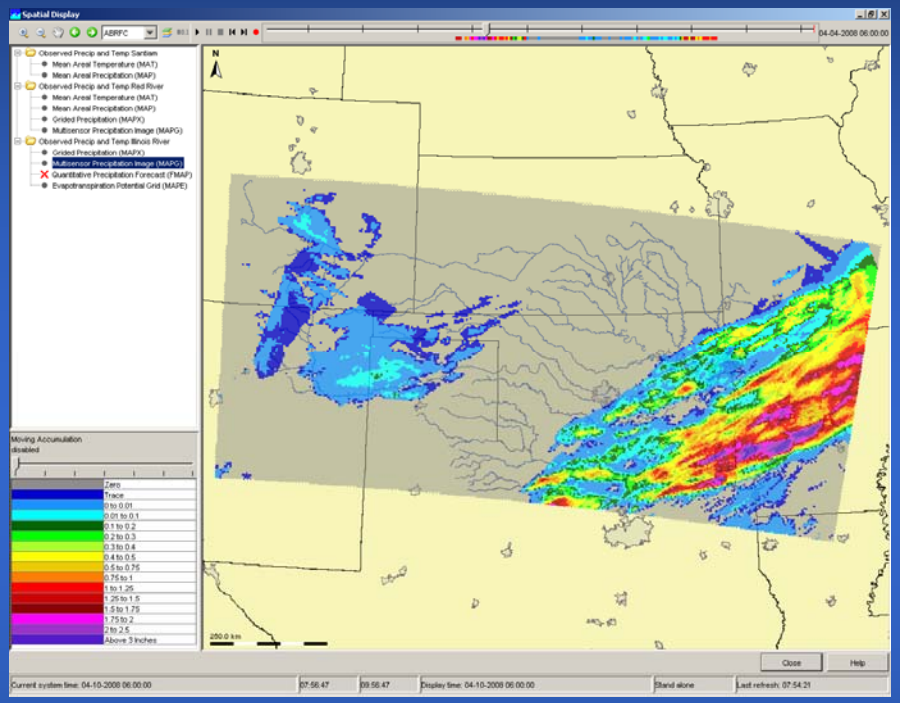
- Each time that HAS QPF forecast is created within GFE, a script is executed which extracts similar point forecasts from other sources (i.e. ISC, HPC, GFS, NAM, EUR).
- Corresponding Basin FMAP values are produced for each source as well.
- This will allow us to evaluate various forecast sources (point and areal) on a somewhat “level playing field”.

GFE FMAP Project



CHPS/FEWS – Gridded Forcings





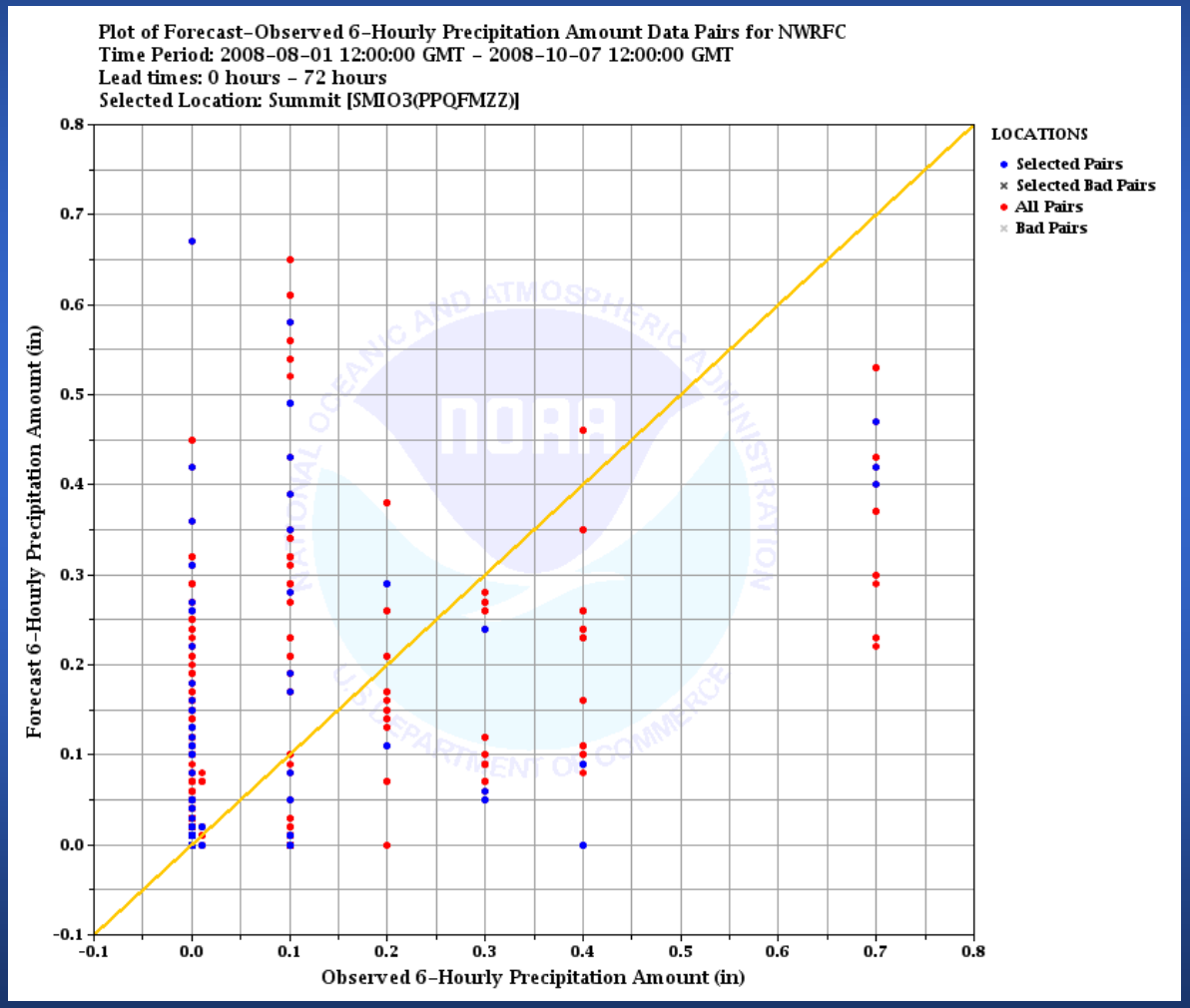
- CHPS will be “fed” gridded 1-hour forcings (observed and forecast)
- Areal and Temporal processing will occur within CHPS.

Other Projects – (1-2 yr time frame)

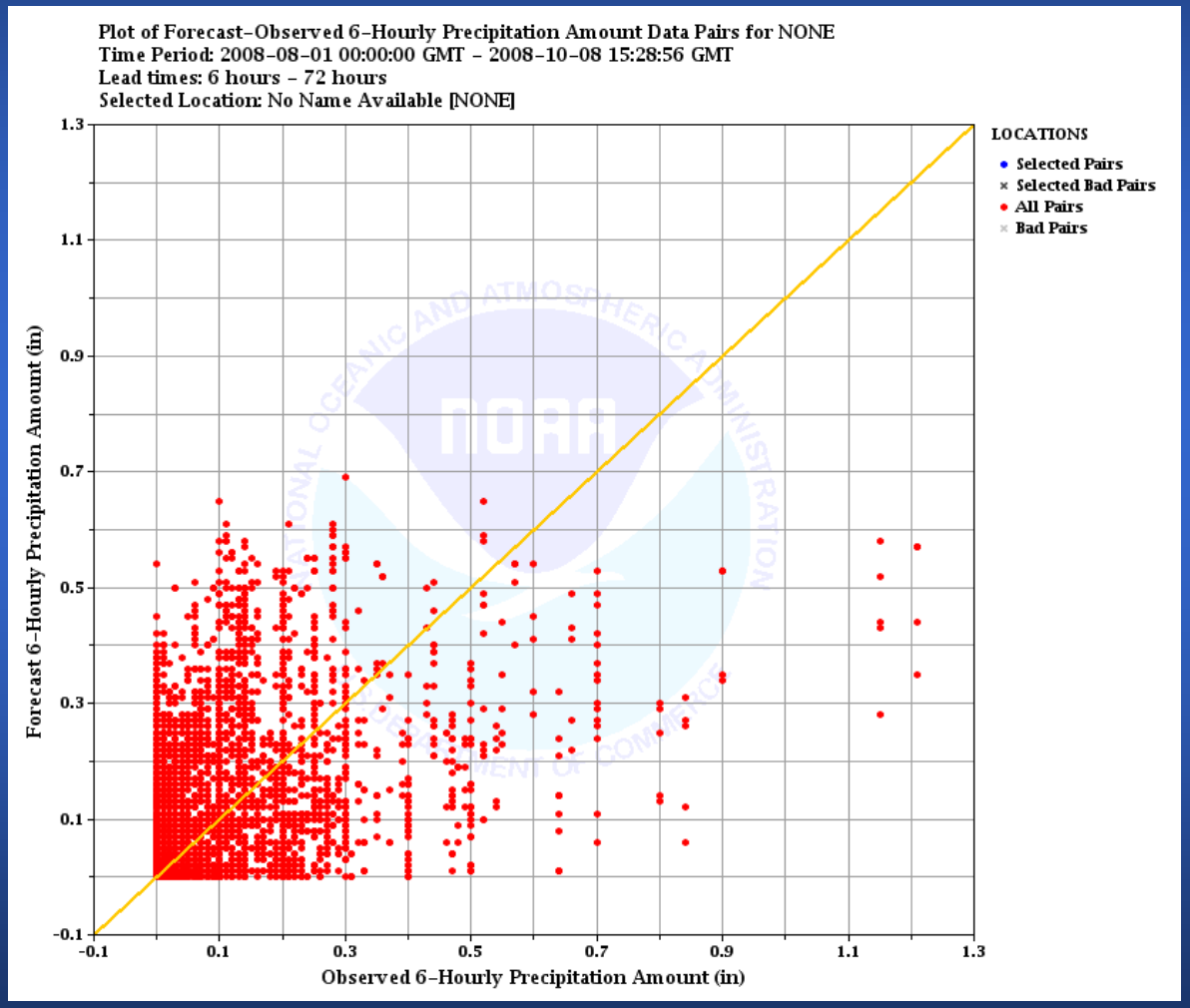
- Expansion of IVP project to include other elements and sites (i.e. temperature, stage, flow)
- Add IVP products to Web (WR Verif. Report Recommendations)
- Test and implement Ensemble Verification System (EVS)
- Test and evaluate Gridded Verification options
- Test and evaluate forecast “re-analysis” capabilities within CHPS/FEWS
- Establish and verify simulations using varied sources for the forcings (i.e. raw model w/no mods, various mean areal input sources, etc.)
- Establish “canned” and mostly automated method for post event analysis. This includes links to update peak-to-peak crossplots and other relationships.

Thank You!

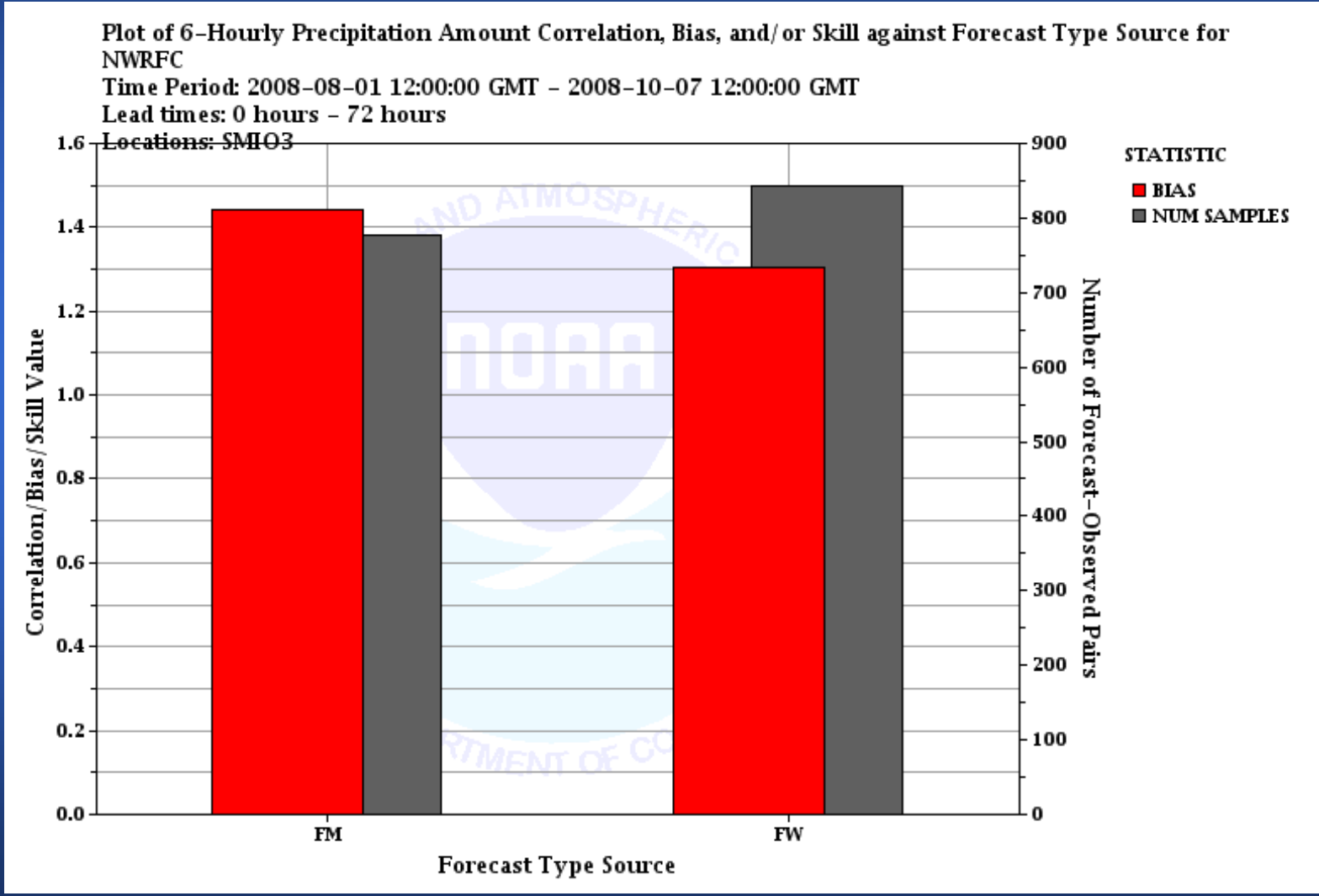
IVP Scatter Plot



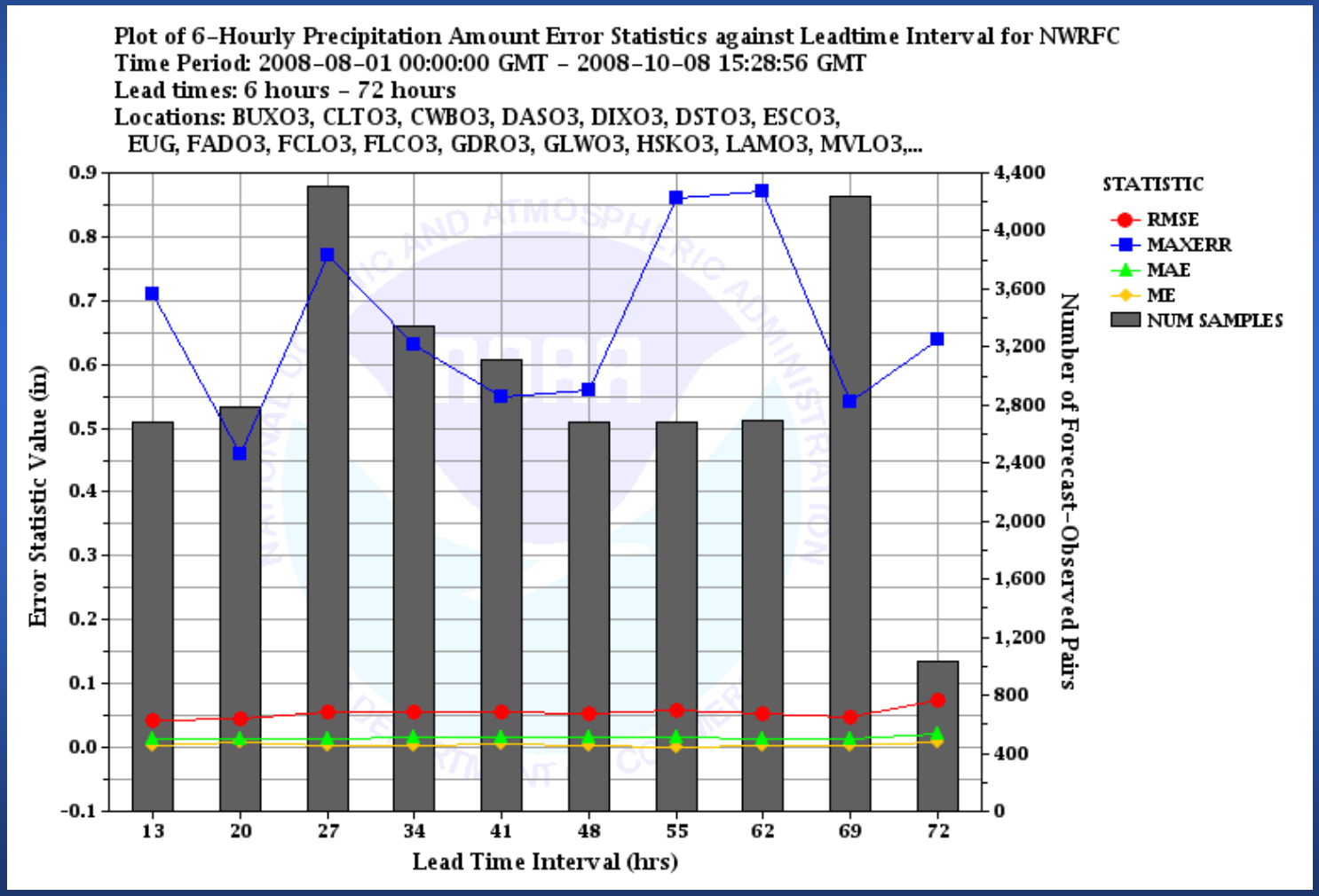
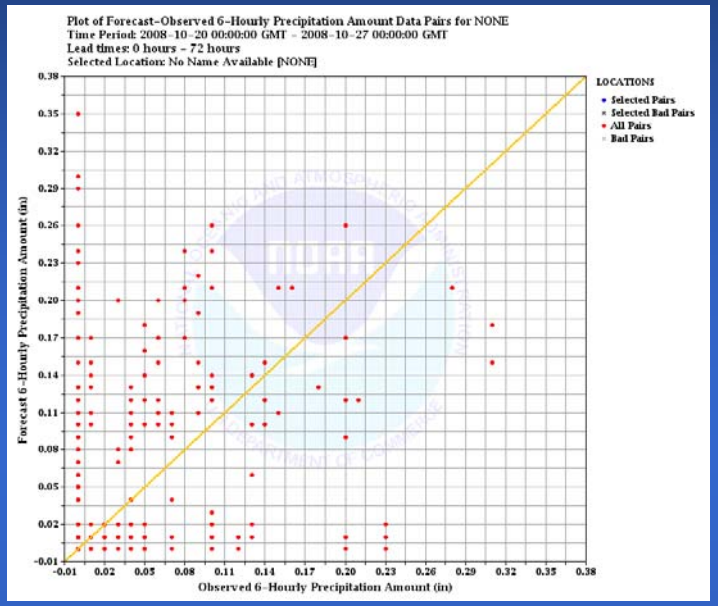
IVP Scatter Plot



IVP BIAS Plot



IVP Error Plot



NWRFC Verification – Current Status