

# **NWS Hydrology Forecast Verification Team: 2nd Meeting**

**12/18/2007 – 11am EST**



*2<sup>nd</sup> Meeting, 12/18/2007*

# Outline

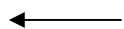
- Website
- Archiving survey
- Selection of case studies
- Next Meetings



# NWS Verification Team: Updated Website

[http://www.nws.noaa.gov/oh/rfcdev/projects/rfcHVT\\_chart.html](http://www.nws.noaa.gov/oh/rfcdev/projects/rfcHVT_chart.html)

1st meeting:  
slides +  
meeting minutes



NOAA's National Weather Service

## RFC Development Management

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Team Charter for  
NWS Hydrology  
Forecast Verification

Team Charter

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Team Members

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Manager

### Team Charter for NWS Hydrology Forecast Verification November 29, 2007

**Vision:** River forecast verification tools and information will be readily available to users including forecasters, service hydrologists, managers, and the general public. Verification information will be meaningful to each user group. RFC forecasters will generate and communicate river forecast verification results and identify shortcomings to be addressed through software, system, or information enhancements. Ultimately, forecast verification will be successful when its results determine actions within each user group.

**Statement of the Problem:** Currently, information on NWS river forecast performance is limited in scope and generally not communicated to most user groups. In recent years, nationally supported verification software has been developed which has great potential to address user needs. However, this software remains largely untapped.

**Mission:** To communicate meaningful river forecast verification information to user groups including forecast users, forecasters, service hydrologists, and management using existing software (IVP and EVS). This mission includes three major components: (1) developing understanding of verification statistics and concepts, (2) developing expertise with IVP and EVS software, and (3) developing standardized verification strategies to effectively communicate results to identified end users while ensuring verification needs are met.



2<sup>nd</sup> Meeting, 12/18/2007

# Archiving Survey

- Goal: describe archiving practice and issues at all RFCs to help identify the archiving requirements
  - Available data
  - Software/Hardware issues
- Feedback from 9 RFCs until now: thank you!
- Survey results:
  - to be integrated in the archiving requirements report (Julie D. & James B.)
  - to support the RFC Archive Database Team led by Julie Meyer





# Archiving Survey

Data Type	Number of locations		Archiving frequency	Period of record		Format/ Database	Time step	Fcst./Re-fcst. Characteristics		Notes	
	Upstr.	Downstr.		Start date	End date			Single-value + Lead time	Probabilistic + Lead time		
Other	Obs.										
	Fcst.										
	Fcst.										
	Re-fcst.										
MODs											
Rating curves											
Other											
Verification stats	For fcst.										
	For fcst.										
	Flow re-fcst.										
Other											



# Archiving Survey

- **Data management**
  - Archive database: too small and too slow; lack of disk space, inadequate back ups & recovery for RAX
  - Files:
    - ✍ Format
    - ✍ Directory structure: flat file structure too rigid
    - ✍ Naming convention
    - ✍ Metadata: sync IHFS db and archive db in ob8.3
- **Data Quality Control:** better tools (GUI to display & edit data)
- **Back up:** necessary but very limited
- **Foreseen problems w/ IVP:** too slow (due to archive db, pb when loading obs), memory issue (setting) (see email from Hank)
- **Foreseen problems w/ EVS:** none - too early



# Selection of Case Studies

- 1 case study for each RFC
- Selection of verification case studies:
  - Key users for specific forecast products
  - Verification questions to address
  - Forecasts to be verified (input & output, lead time, time period, pooling basins/events)
- Examples of questions:
  - How good are my forecasts (peak & volume) when flooding occurs?
  - How good are my forecasts for 30-day minimum flow? Any seasonality?
  - Do QPF forecasts improve flow forecasts? for which lead time? for which type of flows?
  - Do the MODs improve flow forecasts?



# Selection of Case Studies

- Diversity:
  - **Forecast type**: single-valued, ensemble, water supply
  - **Forecast horizon**: short-term, medium-term, long-range
  - **Conditions**: high flows, low flows
  - **Forecast comparison**: multiple basins, multiple runs  
(different inputs, different processes, w/ & wo/ MODs, etc.)
- Common ideas:
  - Verify **input** and **output** forecasts
  - Analyze according to **lead time**
  - Use **reference forecasts** (e.g. persistence) for comparisons
  - **Pool data** from similar basins/conditions to use larger sample size



# Selection of Case Studies

- **ABRFC**: HMOS ensemble hindcasts verified w/ EVS
- **APRFC**: QPF quality from different sources (station weight, MAPX...)
- **CBRFC**: 2 basins, error sources (QPF, MODs,...)
- **CNRFC**: various basins for 1 event, pooling w/ similar events
- **LMRFC**: hurricane Katrina (coastal points w/ storm surge)?
- **MARFC**: error source for non-event? extend to other basins?
- **MBRFC**: joint w/ NCRFC? WFO-TFX seasonal fcst? MM improvement?
- **NCRFC**: joint w/ MBRFC? long-term ensembles verification?
- **NERFC**: QPF quality (HPC, NDFD, RFC, MAPX)? GFS ensembles  
(verified w/ EVS)?
- **NWRFC**: snowmelt event?
- **OHRFC**: ?
- **SERFC**: quality of forecast crest, w/ flood categories?
- **WGRFC**: tropical storm Erin? VAR/DHMS/SSHP verification?



# Next Meetings

- **3<sup>rd</sup> Meeting** on January 17th, 2008 at 12pm EST:
  - Review additional survey results
  - Continue to discuss the verification case studies for each RFC
  - Discuss installation of IVP ob8.2 to be ready to work on exercises
  
- **4<sup>th</sup> Meeting** in February 08:
  - Potential dates: 19-21, 26-28
  - Start presentation of the verification case studies or work on IVP exercises





**Thank you!**

**Questions?**

