NWS Hydrology Forecast Verification Team:

14th Meeting

02/23/2009 – 12 pm EST

Outline

- Raw model definition: input from RFCs
- Forecast users
- Next meeting

Raw Model Definition

- Strategy and objectives to be presented to ARC/HIC

- Proposals from all RFCs

Raw Model Definition: APRFC Proposal

- Objective: raw model = fully automated forecast function
- Frequency: daily or more often (depending on RFC)
- Automatically generated, output sent to archive db
- Model states updated once/twice a year; date of update chosen by RFC
- Only automated QC procedures before OFS data ingest
- Only automated rating updates, or ratings based on measured flows
- New calibration or re-calibration included
- Uniform blend -> 10 days
- No run-time mods, except for seasonal update
- Model QPF ingested from 1 model (constant for the season)
- 10-day QPF to produce 10-day raw model forecast

~ hindcasts w/ warm up period to determine initial set of model states

Raw Model Definition

- **NERFC**: agrees w/ APRFC proposal; definition to be updated if necessary
- **ABRFC**: how the forecaster improves model on day-to-day basis
  - model states from 5 days ago (same start for raw model and operational model)
  - No mods and no instantaneous OBS (CHGBLEND 1 to reset all blends to 1 + IGNORETS INST to remove inst. obs)
  - 2 runs: QPF and no-QPF; saved in archive db
- **CBRFC**: evaluate model performance wo/ QPF
  - Model states adjusted once a year during base-flow conditions
  - Input: QPE and QTE from daily-QC or MPE (including HAS check of gages)
  - Model parameters from manual calibration (same as operational runs)
- **LMRFC**: whether forecaster inputs help or hurt forecasts
  - Similar to operational model: model states + 12-hr QPF
  - No on-the-fly mods

Raw Model Definition

- **MARFC**: various definitions w/ no resetting of model states
  - Raw #1: no obs Q/C; no run-time mods; ADJUST-Q + long BLEND
  - Raw #2: obs Q/C; no run-time mods; HAS inputs; ADJUST-Q + long BLEND
  - Raw #3: obs Q/C; run-time mods; HAS inputs; ADJUST-Q + long BLEND
- **MBRFC**:
  - current raw model = forecast (w/ all run-time mods) not reviewed by forecasters
  - Concerns with APRFC proposal:
    - autoQC inadequate
    - No automated ratings at MBRFC; forecaster reviews and could apply shift
    - 10-day blend too long
    - 10-day QPF too long (usually 24-hr QPF Oct-Mar and 12-hr QPF Apr-Sep)
- **NCRFC**: generally agrees w/ APRFC proposal
  - Varying blend period based on basin time to peak
  - QPF period consistent w/ forecast window (14 days at NCRFC)

Raw Model Definition

- **NWRFC**: some questions on APRFC proposal
  - Regular update of model states (w/ human input)? Or only automatic processes?
  - Blend period: difficult to use a single blend period
  - How to handle regulated points ("normal" operating rules/pass inflow/only head water?)
  - Inputs: 10-day automated forcings from same source/model
- **OHRFC**: standard = most basic raw model; RFC to define other flavors
  - Standard = retrospective hindcast wo/ QPF
- **SERFC**:
  - 2 raw models w/ 24-hr QPF (as used in oper. fcsts) and no-QPF
  - model states updated daily + SETQMEAN for dam release
- **WGRFC**:
  - no human intervention from initialization time to end of model run
  - past human input used for initialization

Raw Model Definition: Issues

- Model States
  - Automatic processes (~ hindcasts)?
  - Regular update of model states (w/ human input)?
- Blend period
  - a single blend period? Or varying blend period?
- Regulated points
  - “normal” operating rules? Or ignore? Or only head water?
- Forcing inputs
  - No QPF
  - w/ QPF: which source? for how far in future?

Forecast users

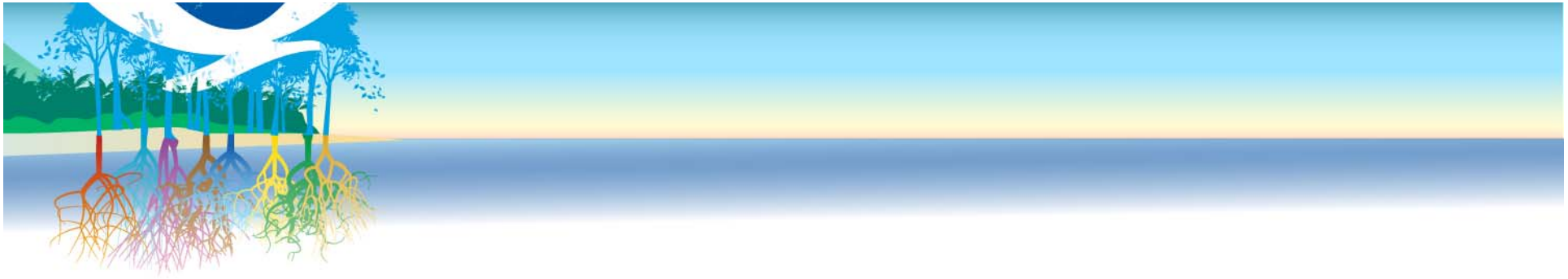
- Levels of details
  - Level 1: poor-fair-good scaling
  - Level 2: level 1 + summary scores + uncertainty band
  - Level 3: level 2 + detailed stats + case studies

- Main groups of users
  - Level 1: general public
  - Level 2: emergency managers, navigation, recreation
  - Level 3: partner agencies, sophisticated users

Next meeting

- 15th meeting on March 23 at 2 pm EST
  - standard verification metrics/graphics
  - feedback on Standard Raw Model proposal

- Feedback on the final team report in April



Thank you!

Questions?