

SURVEY (OFFICE)

This survey is being used to assist in devising procedures for verification of hydrologic forecasts, in ways that can assist forecasters as they are generating forecasts.

Because you are a Hydrologist in Charge of a River Forecast Center, you are being asked to answer several questions about your practices, preferences, and perspectives regarding hydrologic forecasts and their verification. A companion survey is to be completed by **forecasters** within your River Forecast Center with responsibilities for generating hydrologic forecasts. Because some of these questions ask about your personal practices as a forecaster, or about your opinions related to forecasting and verification, **please do not collaborate** with any other forecasters in completing this survey. **Your** answers are important. You can expect to spend about 1-2 hours completing this survey.

This survey is completely confidential. When I receive your survey, before I examine any of the responses, I will remove all identifying information (including the email address from which it was received and document editing identification). No other personnel, either within the NWS or connected with this project, will have access to the individual survey responses. They will have access *only to summaries* of the survey responses.

Finally, please note that this survey is not a test of your intelligence or knowledge about forecasting or verification. Rather, your responses are important because you are among the few experts in operational forecasting in the nation. Your responses will be important in devising procedures for verifying hydrologic forecasts in ways that can assist forecasters *as they are generating* forecasts.

There are no known risks from your participation and no direct benefit from your participation is expected. There is no cost to you except for your time and you will not be compensated for your participation. You can obtain further information from Dr. Holly C. Hartmann at 541-607-6722 or hollyoregon@juno.com or from Dr. Bisher Imam at 949-824-8830 bimam@uci.edu

This survey has a total of 20 questions. It should take between 60 and 90 minutes to complete. It could be completed in sections. But we would like to have all RFCS provide their responses within xxxx days.

1. Which statement best describes your hydrologic forecasting duties

Please check only one statement

- I am a full time hydrologic forecaster. I perform hydrologic forecasts on daily basis
- I am a full time hydrometeorology forecaster (HAS) forecaster
- I supervise a group of forecasters
- Other, Please specify: _____

2. Stream flow forecasts issued by your center are primarily used by:

Please check all that applies

- Water resources systems operators
- Flood control districts
- Emergency management agencies
- General public
- Farmers and ranchers
- Power companies
- Others
- I do not know

3. How many forecasting points are you responsible for? Please specify: _____

4. Approximately, how many of the forecasting points you are responsible for represent headwater basins _____

5. Please indicate the standard forecast window of your routine daily deterministic Streamflow forecast products

- 24 Hours
- Up to 3 Days
- Up to 7 Days
- Up to 15 Days
- Longer than 15 days: Please specify _____

6. Do you use Quantitative Precipitation Forecasts (QPF) as input to you hydrologic model during the forecast period

- Yes
- No

7. If you answered yes to the above question, please indicate which QPF interval and duration you use

- Only the first 6 hr QPF
- 6 hr QPF for the first 24 Hrs (4 intervals)
- 6 hr QPF for the first 48 Hrs (4 intervals)
- 6 hr QPF for the first 72 Hrs (4 intervals)
- Other, please specify _____

8. Do you use Temperature forecasts as input to the hydrologic model during the forecast period

- Yes
- No

9. Do you or does your center keep an archive of MODS

- Yes
- No

10. If yes, please indicate, to the best of your knowledge the length of MOD archive available at your center

- Less than 2 years
- 2 to 5 years
- 5 to 7 years
- More than 7 year

11. In your RFC, is there a mechanism to archive Carry-over files

- Yes
- No

12. Whether or not you perform MODS, please indicate your agreement level with each of the following statements

Statement	Strongly Agree	Somehow agree	Somehow disagree	Strongly disagree	Not sure
While MODS may improve the current forecast, they will complicate the next forecast	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MODS are integral part of operational forecasts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
From an operational perspective, the current forecast modification process is adequate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is important to allow forecasters to exercise their knowledge of their forecast basins and points, particularly in realtime operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mod process can be improved by allowing the forecaster to conduct realtime sensitivity analysis before accepting a given modification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MODS can be improved by providing tools to access retrospective analysis of past forecast performance results	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the future, Manual Modifications will be replaced by automated modification procedures such as data assimilation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Automated procedures should not replace forecasters' experience with their basins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to automated procedures may be helpful in some situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. If your center has a mechanism to archive carry-over files, please indicate, to the best of your knowledge the length of carry-over archive available at your center

- Less than 2 years
- 2 to 5 years
- 5 to 7 years
- More than 7 year

14. Please check the type in-house of retrospective studies you have performed or participated in performing

- Calibration for new forecast points/basins
- Model re-calibration
- Deterministic forecast verification (Forecast skill assessment)
- Probabilistic forecast verification
- None, I (for ind/ we for office) have not done or participated in retrospective studies

15. How often does your center issue probabilistic forecasts

- Daily
- Every 3 days
- Weekly
- Bi-weekly
- Monthly

16. Please indicate the number of points for which your center issues probabilistic Streamflow forecasts _____

17. What is the standard lead time of ESP forecasts issued by your center

- 1 week
- 15 days
- Month
- Season (90 days)

18. What are the standard ESP products issued by your center, please check all that applies

- Weekly chance of exceedance level
- Daily exceedance probabilities
- Flood stage exceedance/non-exceedance probability within 90 days
- Flood stage exceedance/non-exceedance probability within 30 days
- Seasonal runoff volume exceedance probabilities
- Customers may build their own products from the forecast ensemble from our website
- Others please specify below

19. Have you attended formal training on ESP tools in the NWSRFS

- Yes
- No

20. In most cases, retrospective studies are conducted during off-season. This depends on the length of the “busy” forecast season. Considering the October-September water year, please indicate, approximately (rough estimates), the proportion (in percentage) of your time spent during each three month period, on each of the tasks indicated.

3 Month Period	Forecasting	Customer Interaction	Retrospective studies including forecast skill assessment and model re-calibration	Training	Preparation including model configuration for new points and basins	Other Developmental Activities (e.g. GIS, flash flood, new model evaluation, etc)	Other (do not specify activity)
Oct-Dec							
Jan-March							
Apr-Jun							
Jul-Sept							