Winter 2016-2017

Performance & Evaluation Branch Operations Division NWS Office of Chief Operating Officer Silver Spring, Maryland

This Issue

- ⇒ NWS FY2016 Q4 Customer Satisfaction Survey Update Page 1
- ⇒ Did You Know? Page 5
- ⇒ Ask Chuck! Page 9
- ⇒ Status Update on TAF Verification Requirements and Specifications Page 12
- ⇒ Service Assessment Program Page 13
- ⇒ Status of Service Assessment Action Items Page 14
- ⇒ Contact Information Page 15

NWS FY2016 Q4 Customer Satisfaction Survey Update

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Sal Romano, NWS Headquarters

Here's the latest update on our ongoing customer satisfaction surveys. This article is about the FY2016 Q4 (summer), continuous, pop-up survey on NWS websites (e.g., weather.gov, forecast.gov, WFOs' web pages) that was "live" from early April 2016 to early July 2016 and the Internet Panel survey that was completed in April 2016.

At a glance, the number of respondents were as follows:

Pop–Up Survey (3–month period) – 6,665 respondents

Customer Satisfaction Score = 82 (TREND \Rightarrow steady)

Internet Panel Survey - 486 respondents

Customer Satisfaction Score = 76 (TREND \Rightarrow rising)

The pop-up survey respondents had an Overall Customer Satisfaction Index score of 82. This is the same score as the previous quarter (i.e., the spring quarter).

Each of these quarterly surveys contains approximately 25 questions. The customer satisfaction index questions to

Winter 2016–17 Edition

NWS FY2016 Q4 Customer Satisfaction Survey Update - Continued from Page 1

determine the satisfaction score, desired outcomes questions, and demographics questions make up about 15 questions. These questions are never changed. In addition, there are about 10 seasonal/topical questions. These questions are changed from quarter-to-quarter as follows (current article focusing on the Summer 2016):

- Fall 2016 (Q1 FY17), this version of the survey went "live" in early October 2016 and contains questions on winter weather, including extreme cold/wind chill ques-tions.
- Summer 2016 (Q4 FY16), extreme heat and weather threats to rangeland fires.
- Spring 2016(Q3 FY16), severe thunderstorms and tornado questions
- Winter 2016 (Q2 FY16), winter weather and flash flooding questions
- Fall 2015 (Q1 FY16), extreme heatrelated and weather threats to rangeland fire-related questions
- Summer 2015 (Q4 FY15), severe thunderstorms and flash flooding questions
- Spring 2015 (Q3 FY15), winter weather and Weather Ready Nation questions

In addition to the pop-up surveys, CFI selects a panel of individuals each quarter and compensates them to take a very similar survey on the Internet. These Internet panelists/respondents more closely represent the demographics of the United States according to the 2010 U.S. Census. The Internet panelists took the summer survey, containing ex-treme heat and weather threats to rangeland fires, in July 2016. The July 2016 Internet Panel Overall Satisfaction score of **76** is an increase of four points from the last quarter.

PERCEPTIONS OF EXTREME HEAT UNDERSTANDING AND FOERECAST ACCURACY

Results of the surveys revealed that the Pop-up and Internet Panel respondents in FY2016Q4 showed significantly more knowledge of extreme heat events than those surveyed in FY2016Q1. Also, Pop-up and Internet Panel survey respondents in FY2016Q4 had significantly higher scores than in FY2016Q1 for how well NWS contributes to their understanding of the dangers of *extreme heat events and* the *accuracy of* extreme heat events *information*. Perceptions of *accuracy* improved by nine points since FY2016Q1 for both Pop-up and Internet Panel respondents.

PERCEPTION OF WILDLAND FIRE ACCURACY

Pop-up and Internet Panel survey respondents in FY2016Q4 rated the NWS's accuracy of wildland fire weather information very favorably and even improved their rating by five percent from FY2016Q1.

FEEDBACK ON CLIMATE SERVICES

Respondents from both the Pop-up and Internet Panel surveys rated their familiarity with NWS Climate Services on the low side. An interesting and partially-related comment received from a respondent was: *"Better access to historical weather records, better coverage/reporting on local significant weather events, like to see satellite photos available in time lapse like radar images, would like to see online weather discussion forum moderator by NWS experts..."*

Here's another interesting comment: "*More weather history should be made available and also emphasized to the general public. It should be easier to find on your site...*"

HOW TO ACCESS CUSTOMER SATISFACTION SURVEY RESULTS

The NWS Pop-Up and Internet Panel survey results are available through a Web portal provided by CFI. You may access the survey results' Web

Winter 2016-17 Edition

NWS FY2016 Q4 Customer Satisfaction Survey Update - Continued from Page 2

portal at: <u>https://portal.cfigroup.com/Portal</u>

The generic username and password are:

Username: <u>NWSwm@noaa.gov</u> Password: NWSportal1

Once you have gained access to the portal you will see the survey menu selections (Figure 1) or in some cases you will need to first go to the upper right side of the screen and click "Exit to Portal List."

If you select any of the "NWS Pop-up" options, for example "NWS Pop-up Q4 FY2016," you can then go to the far left side of the page and click on "Questions" in **(Figure 2)**.



Figure 1. Survey menu selections.



Figure 2. Example of NWS Pop-up Q4 FY 2016 page - Questions and WFO Menu.

A dropdown menu will appear containing three WFO options at the bottom: WFO – Group 1, WFO – Group 2, WFO – Group 3. Each of these options contain about 40 WFO identifiers in alphabetical order. You can obtain the results for one or more particular WFO(s) by selecting the desired identifier(s).

Winter 2016-17 Edition

NWS FY2016 Q4 Customer Satisfaction Survey Update - Continued from Page 3

You can obtain all of the respondents comments for the selected WFOs at the center, top of the page, by clicking the "Comments" selection tab (Figure 3). Once the "Comments" selection tab is clicked, a page will be displayed on which in the middle there will be a "Comment Selection" option.

Here are explanations of two of the selection options:

First, the "Changes to improve satisfaction" selection is based on the initial question asked of respondents: "First, please consider all of your experiences with the NWS. Using a 10-point scale on which 1 means "Very Dissatisfied" and 10 means "Very Satisfied," how satisfied are you with

the NWS?" If the respondent gives a low score (i.e., 6 or lower), then this follow-up question is asked: "Please indicate what the NWS should change to improve your satisfaction."

Second, the "Thoughts about improving service" selection is based on this survey question: "Please share with us any final thoughts you have about the ways the NWS could improve our services to you." This question is asked of all respondents and not just those who gave a low score.

In regard to the Internet Panel, the results are provided for Q4 FY2016 (July 2016) by clicking on "NWS Internet Panel - Q4 FY 2016" from the main portal menu selection screen.

If you receive our CFI NWS Customer Satisfaction Survey pop-up, please take a few moments to complete the survey. <u>Note:</u> A different continuous pop -up survey is being administered for the NWS by the Office of the CFO through ForeSee. That survey

| Comments | Respondent Information | |
|------------------------|--|--------------------|
| Comments | | |
| | | |
| | Filters | vvora Cioua |
| Time: FYQ4 2016 | 5 | schedule hydration |
| | | A a weather stave |
|) Active Filters | | AC weather staye |
| | | AM extreme St |
| | Score Range | i u in outdo |
| | | Intake live Outoo |
| Current Selection: | Customer Satisfaction Index | plenty drank hvo |
| Vin Score Value | 0 🗮 | limited |
| Max Score Value | 100 = Apply Range | Water |
| | | time IOIS |
| | | sup work air QIII |
| Co | mment Selection | sui vvOrkai |
| | | beat extra |
| Actions taken who | en received NWS info | plans local a |
| Actions taken when | received NWS info | activities " |
| Changes to improve | extreme heat decision making | |
| Changes to improve | satisfaction | increased Shade |
| Sources of obtaining | fire weather info and information you're i | interested in |
| Thoughts about imp | roving service | psed plants outd |
| Other - race or origin | | working Change |

Figure 3. Screen capture of Q4 FY2016 "Comments Selection" page.

focuses on the NWS's weather.gov site and the pop-ups only occur on that website and not on the WFOs' web pages.

BACKGROUND ON CUSTOMER SATISFACTION SURVEYS VIA CFI GROUP

The Performance and Evaluation Branch in the Operations Division of the Office of Chief Operating Officer continues to contract with the Claes Fornell International (CFI) Group to assist in the development and implementation of the NWS customer satisfaction surveys. The CFI Group staff are experts in the science of customer satisfaction and use the American Customer Satisfaction Index (ACSI) methodology. The ACSI was created by CFI Group's founder, Claes Fornell, under the auspices of the University of Michigan. It is the only uniform measure of customer satisfaction of the U.S. economy and is used by more than 200 companies and government agencies.



By Doug Young, Performance and Evaluation Branch, NWS Headquarters

Did You Know that the Performance and Evaluation Branch (PEB) has implemented a new software program to manage and track service assessments?

While this may be transparent to most NWS employees, it's a leap forward for the agency in our ability to create new assessments, manage ongoing assessment milestones; and create and manage new findings, recommendations, and action items. Among the upgrades of this new software created by ERT, Inc., to support the NWS Operations Division, it has the ability to generate various types of reports to meet user needs and reduce the administrative burden on PEB staff by automatically transmitting email messages to obtain action item status updates from identified points of contact.

This software program is called the *Service Assessment Tracking System* or *SATS* for short. I'd like to share some of the features of the modernized SATS.

Creating a New Service Assessment

Once a service assessment team is chartered and launched, a new service assessment is entered into the system. As shown in **Figure 1** on the next page, the assessment overview is created, which includes the background, team members and consultants, the most recent status of the active team, the general impacted area, and links to the charter. When available, links will also be made available to the signed service assessment report and the related findings and actions. This information is maintained as a permanent record.

Managing Findings, Recommendations, and Actions

When a service assessment report is signed by the executive sponsor (e.g., NWS AA, NWS COO) and publicly released, the recommendations within the service



Did You Know? - Continued from Page 5

| Service Assessments | |
|--|----------------|
| The Historic Nor'easter of January 2016 | |
| Assessment Overview Eindings and Actions | |
| Background: | Impacted Area: |
| A major winter storm produced 18-36 inches of snow over a wide area of the eastern United States, from West Virginia to southeastern New York. Bailtimore-Washington International Thurgood Marshall Airport set a new record nonwitorm total snowfall of 92.2 inches. Washington-Dulles International Airport (28.3 inches) and New York Central Park (26.8 inches) recorded their second highest storm total snowfall in recorded history. The storm produced wind gusts exceeding 60 mph at numerous locations along the Atlantic Coast in Massachusetts, New Jersey, Delaware, and Virginia. The peak gust reported was 85 mph in Assateague, Virginia. Major coastal flooding occurred in southern New Jersey and Delaware. Preliminary data show that Cape May, New Jersey, experienced a storm surge of 3.9 feet and a total water level of 9.0 feet. This exceeded the record of 8.9 feet during Hurricane Sandy in October 2012. Team Members: • Thomas Johnstone , MIC , Corpus Christl, TX , Team Lead • Alan Gerard , Meteorologist at NSSL , Norman,OK • Andy Nash , MIC , Burlingon, VT • Bruce Smith , MIC , Gaylord, MI • Cedar League , Social Scientist , Helena, MT • Kevin Barjenbruch , WCH , Salt Lake City, UT | |
| Team Consultants: | |
| Paul Pisano , Manager , FHA, WDC | |
| Status: | |
| Report publically released - 12/06/2016 | |
| Documents: • Signed Charter • Signed Report | |

Figure 1. SATS Assessment Overview Graphical User Interface (GUI)

assessment report are vetted through the NWS Mission Delivery Council (MDC) and a standardized position (e.g., validated requirement, ongoing activity) is determined for each recommendation. The recommendations are entered into SATS as new action items and the language may be adjusted so that the actions are more pointed, achievable, and closeable. Initial points of contact will then be determined collaboratively and this information will be entered into SATS using the menu screen shown in **Figure 2**.

| Verification | Evaluation | Storm Data | Training > | Data Tools 🛛 🕨 | Resources 🕨 🕨 | About) | Report a Bug | | | |
|--------------|--------------------|---------------------|-----------------|----------------|-------------------|----------------|---------------------|------------------------------------|--------------------|-------------------|
| Home >> Ser | rvice Assessments | | | | | | | | | |
| Finding | js / Recomm | endations / / | Action Manag | ement Page | | | | | | |
| Assessm | nents to Show: | NWS N | Clear All | sessment 📄 NWS | Regional Service | e Assessment 🛛 |] NWS After Actio | n Review 📄 NOAA Service Assessment | | |
| Filter by | Assessments: | () All | Containing Op | en Actions 🔵 V | ith All Actions C | losed | | | | |
| Downlo | ad Table in CSV Fo | ermat | | | | | | Filter by Date: | Beginning | Ending 🔹 |
| | | Service Assessm | ent Name | | Event D | ates | Findings | Recommendations | Open Actions | Reports |
| | <u>The H</u> | listoric Nor'easter | of January 2016 | | 01/22/ 01/24/ | 2016 2016 | 28 <u>Manage</u> | 33 <u>Manage</u> | 6 <u>Manage</u> | Short Detailed |
| | | | | | | | | | | |

Figure 2. SATS Findings/Recommendations/Action Management GUI

As an example, for *The Historic Nor'easter of January 2016*, clicking on the active link for "Findings" yields the interface in **Figure 3** on page 7, which allows PEB administrators the ability to edit all findings, and manage associated recommendations.

Generating Reports

A useful feature of the new SATS program is the ability to generate specific reports about the service assessment findings and actions. As opposed to a simple "print"



Did You Know? - Continued from Page 6

| Manage Finding | js | |
|---|---|---|
| Assessment Name: Findings in this Asse | The Historic Nor'easter of January 2016 Add New Finding | ndations All Actions |
| Finding Number 🔻 | Finding Description | Functions |
| 1 | A preliminary subjective and cursory objective analysis of NAM runs both with and without supplemental upper air data provided by EMC showed minimal impracts from the extra data. Snowfall forecasts showed some small improvements for some sites, but other sites actually showed degradation. On average, snowfall forecasts based on verification for several clifes showed a very small improvement with model runs that included supplemental upper air data. | Edit Finding Manage Recommendations |
| 2 | WPC does not have an onsite NOAA PCA staffer, unlike centers with similar missions such as SPC and NHC. Additionally, collaboration between WPC and NOAA PCA for the blizzard was ad hoc and minimally effective. | Edit Finding Manage Recommendations |
| з | The routinely produced Day 2–4 impact outlook maps, and the specially-created Day 5–7 impact outlook maps for this event were created specifically for FAA Command Center daily conference call briefings. These briefings may have remote participation from CWSU staff, FAA Air Route Traffic Control Centers (ARTCC) Traffic Management Unit, and Terminal Radar Approach Control Facility (TRACON) staff. The maps are not otherwise available to or coordinated with CWSU staff, though they could help CWSU staff create briefings for ARTCC. | Edit Finding Manage Recommendations |
| 4 | Senior MEMA personnel strongly indicated that onsite IDSS was crucial to their success. | Edit Finding Manage Recommendations |
| 5 | As SLO for Maryland, WFO Baltimore/Washington coordinates statewide briefings and graphics utilizing forecast products and services from the other WFOs serving the state. Maryland officials stated a strong need for statewide services, including graphics and products. | Edit Finding Manage Recommendations |
| 6 | While WFOs (including WFO Baltimore/Washington) correctly followed the experimental product process outlined in NWSI 10-102, New or Enhanced Products and Services, the comments of partners and NWS forecasters raised concerns about the physical and social science robustness of these products. Many experimental techniques and services in other NWS service programs are vetted via a testbed or proving ground experiment prior to implementation; however, no mechanism currently exists for such testing of WFO winter weather products. WFO personnel specifically emphasized that a testbed/proving ground for these winter weather services could have reduced operational problems that were noted with these services during the bilizzard. | Edit Finding Manage Recommendations |
| 7 | The Winter Weather Advisory issued a few hours before rush hour on January 20, 2016 provided insufficient lead time for Washington, D.C. area transportation officials to pre-treat roads and mobilize resources. | Edit Finding Manage Recommendations |
| 8 | Emergency employee lodging and food was critical in sustaining operations. | Edit Finding Manage Recommendations |
| 2 | | Edit Finding |

Figure 3. Manage Findings GUI for The Historic Nor'easter of January 2016

command, SATS has a Report GUI to tailor the report based on specified criteria (**Figure 4**). After selecting one or more assessment types, reports can be created based on keywords found in open, closed, or unassigned action items. Those

| SATS Report Ge | neration Interface | | | | |
|----------------------|--|-----------------------------------|------------------------|-----------|---|
| Assessment Types: | NWS National Service Assessment Service Assessment | NWS After Action NO Review As: | AA Service sessment | | |
| Assessment Names: | All Assessments | T | | | |
| Actions Included: | Unassigned Open Closed | Include by Date: | Beginning | Ending | |
| Keywords: | | | | Selected | |
| (leave blank if all) | Communications Coordination Data Decision support Dissemination Embedded Meteorologists EMC - Environmental Modeling Center EMs - Emergency Managers Equipment Outages EEMA - Federal Emergency Management Agency | Add Remove | | | Ŷ |
| | | | | Clear All | |
| Points of Contact: | | | | Selected | |
| (leave blank if all) | A W Aaron Dorn Aaron Cilstad Aaron Cileson Aaron Gray aaron Jacobs Aaron Johnson Aaron Mangels Aaron Mangels Aaron Mayhew | Add Remove | | | ŕ |
| | | | | Clear All | |
| Offices/Teams: | | | | Selected | |
| (leave blank if all) | Alaska Region Analyze, Forecast and SAnalyze, Forecast and Support Analysis and Mission Support Division (AFS1) Analysis and Prediction Division (NWC4) Aviation and Soace Weather Services Branch (AFS24) | Office (AF | | | • |

Figure 4. SATS Report Generation Interface

Did You Know? - Continued from Page 7

keywords are assigned to action items when they are initially entered. Reports can also be created for action items assigned to a specific point of contact, region, office, or team. Report types may be short or detailed. In addition, a Director's Report is available in a specific format to highlight recurring themes in the action items and the status of those action items.

Automated Email Service

One of the most useful new features in the SATS software is the Automated Email Service (Figure 5). This tool allows SATS administrators to create reminder emails for points of contact. The email messages may be set up on a specified schedule and automatically transmitted. Not only will this process save time and effort for PEB staff, but it will help keep action items on track and maintain a communication log for reference.

| Select Assessment | The Historic Nor'easter of January 2016 • | | | | | | | |
|-------------------|--|--------------------|-------------------------|------------|--|--|--|--|
| want to | Email all action points of contact | | | | | | | |
| Repeats | Monthly • | | | | | | | |
| Months | 🕑 January | 🕑 April | ✓ July | ✓ October | | | | |
| | 🔲 February | 🔲 May | 📃 August | 📃 November | | | | |
| | 🔲 March | 🔲 June | 🗌 September | 🔲 December | | | | |
| | | | | | | | | |
| Days | I | 9 | 17 | 25 | | | | |
| | 2 | 10 | 18 | 26 | | | | |
| | 3 | 11 | 19 | 27 | | | | |
| | 4 | 12 | 20 | 28 | | | | |
| | 0.5 | 13 | 21 | 29 | | | | |
| | | 14 | 22 | 31 | | | | |
| | 8 | 16 | 24 | 0.01 | | | | |
| | | | | | | | | |
| Starts On | 01/30/2017 | • | | | | | | |
| Ends On | 01/20/2018 | | | | | | | |
| | 01/30/2018 | | | | | | | |
| Message | "Greetings, | | | | | | | |
| | This is a remind | er to provide us v | vith an update to Actio | n 5etc." | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | Set up ema | nil | | | | | | |

Figure 5. SATS Automated Email Service GUI

Overall, SATS is a welcomed tool to improve the efficiency of managing, tracking, and archiving the history of NOAA NWS service assessment information with the goal of continually improving NWS services to the Nation.

Winter 2016-17 Edition



By Chuck Kluepfel, NWS Headquarters

Question: What are examples of good Gerrity and Peirce Skill Scores for marine verification?

Answer: The values of these scores vary with *location* and *time of year* so it is best to keep these two quantities as constant as possible when comparing scores. Both scores are calculated from a contingency table of observed categories of data (rows) versus the identical forecast categories of data (columns). An example of two categories of ceiling data are (1) less than 200 feet, and (2) 200 to 400 feet. The upper left to lower right diagonal of the contingency table contains all the categorically correct forecasts, where the forecast category equals the observation category to which it was matched in space and time. Ultimately, skill scores measure the closeness of the collective entries in the contingency table to this "clairvoyance diagonal" of categorical hits, but they also subtract a value that estimates how much artificial skill was obtained by randomness or guessing (the dart board effect).

The Peirce score only gives credit for categorical hits that lie on the clairvoyance diagonal, so large errors are treated the same as small errors. The Gerrity score is a little more sophisticated. It provides full credit to each categorical hit on the clairvoyance diagonal and partial credit (or a graduated penalty) for each missed forecast to the right or left of the diagonal. Not surprisingly, large misses receive less credit (or more penalty) than small misses in the same observation category. The Peirce score has no provision for partial credit or graduated penalties so its baselines tend to run lower than the Gerrity score, but both scores use Murphy's equitability constraints, which have the following boundaries: the score equals zero for a full set of no skill forecasts and unity (1.0) for a full set of forecasts with all categorical hits. Negative scores are rare, but possible, especially with very small samples. I am in the process of posting a new set of training modules to the Commerce Learning Center that explains contingency tables and performance measures; part 3 is devoted to skill scores. Part 1 is scheduled to appear in March 2017; parts 2 and 3 will follow. I encourage you to take the training and provide me with your feedback.

The Peirce score assumes all forecasts (and events) are created equal and weights each individual event equally. Conversely, the Gerrity score provides equitable weighting to each category in the contingency table. The result is the Gerrity score weights each individual rare event (e.g., high winds and high waves) substantially more than each individual common event, making the Gerrity score more sensitive to rare event hits than the Peirce score. However, in fairness to all forecasters, the Gerrity scoring equations do not weight the penalties for rare event misses higher than the penalties for common event misses. For the mathematical details of Gerrity and Peirce, see the Verification Procedure Reference Guide, appendix A, sections 2.8 and 2.9.

Getting back to your question, **Figures 1 thru 4** on pages 10 and 11 provide timelines with over 20 years of wind speed and significant wave height performance, using the NWS National Digital Forecast Database (NDFD) and its predecessors. The *proportion correct* measure is a form of the Government Performance and Results Act (GPRA) measure reported monthly for marine forecasts. A correct wind speed forecast is defined as any forecast with an absolute error less than 5 knots, and a correct significant wave height forecast is defined as any forecast with an absolute error less than 2 feet. When higher observed winds and

Ask Chuck - Continued from Page 9



Figure 1. Proportion correct and Peirce Skill Score for NWS sustained wind speed forecasts (coastal, offshore, and Great Lakes waters). Projections are for Days 1, 3 and 5, as labeled. Day 1 is defined as the 3- to 24-hour forecasts; Day 3 as the 51- to 72-hour forecasts, and Day 5 as the 102- to 120-hour forecasts.







Figure 3. Proportion correct and Peirce Skill Score for NWS significant wave height forecasts (coastal, offshore, and Great Lakes waters). Projections are for Days 1, 3 and 5, as labeled.



Ask Chuck – Continued from Page 10



Figure 4. Gerrity Skill Score for NWS significant wave height forecasts (coastal, offshore, and Great Lakes waters). Projections are for Days 1, 3 and 5, as labeled.

waves are observed, higher absolute error thresholds are used in the definition of a correct forecast (see any marine verification data report for a table that lists these thresholds). Feel free to run stats for your area to get a set of baseline scores for your office, region, or national center. Remember, it isn't wise to compare scores from different parts of the country or different times of the year to one another.

Starting October 2013, when the new marine verification software was launched, we began verifying each 1800 UTC forecast (along with all other times of the day, every 3 hours for short-term winds, and every 6 hours for extended period winds and all waves) with the matching observation from that specific hour. For comparison, in the legacy marine verification program we averaged five consecutive hourly observations (1600 to 2000 UTC) and matched that average to the 1800 UTC forecast. Beginning in FY14, we substantially redefined the significant wave height contingency table categories used for verification, but we only tweaked four of the wind speed categories. These collective changes in our methodology seem to have caused a permanent dip in the NWS Day 1 baseline scores for these elements. This is not a problem, but you must be aware of this when interpreting a time series of scores.

By summer of 2017, all forecast and observation data will be loaded into the system on a daily basis for near real-time forecast feedback. Currently, users need to wait about two months to view their verification statistics, but that will change this summer when verification data will be available on a near real-time basis (i.e., within a couple days for the Day 1 forecast). How did your office or national center perform? Run the scores and find out, but more importantly, track your future performance and the performance of various guidance products once guidance data are loaded into the system—this should happen by late 2017. This way you'll know how well each guidance product is supporting the forecasts you prepare.





By Beth McNulty, NWS Headquarters

Last spring we began the reconstruction of the requirements behind the Stats-on-Demand TAF verification program. By fall we had a fairly complete collection of requirements. During fall we took the requirements list and developed a subset of scientific requirements. From these two reconstructed documents we began developing programming specifications that the Performance and Evaluation Branch programmers will use to update the TAF verification program. Part of the update includes fixing known problems in the TAF verification code. As of mid-January the first draft of the programming specifications was delivered to PEB staff for review, comments, and edits. Assuming all goes well, this project is on schedule for completion by the end of the year.



Winter 2016–17 Edition

Peak Performance



By Sal Romano, Performance and Evaluation Branch, NWS Headquarters

One Service Assessment Document Publically Released While Another Is In Second Draft

The Historic Nor'easter of January 2016 Service Assessment document was publically released on December 6, 2016. The Hurricane Matthew Service Assessment team was deployed on October 31, 2016 and has completed the second draft of its report.

The Historic Nor'easter of January 2016 Service Assessment

A major winter storm produced 18–36 inches of snow over a wide area of the eastern United States, from West Virginia to southeastern New York. Baltimore–Washington International Thurgood Marshall Airport set a new record snow storm total snowfall of 29.2 inches. Washington–Dulles International Airport (28.3 inches) and New York Central Park (26.8 inches) recorded their second highest storm total snowfall in recorded history. The storm produced wind gusts exceeding 60 mph at numerous locations along the Atlantic Coast in Massachusetts, New Jersey, Delaware, and Virginia. The peak gust reported was 85 mph in Assateague, Virginia. Major coastal flooding occurred in southern New Jersey and Delaware.

The service assessment team presented their findings to the NWS upper management on Monday, October 17, 2016. The service assessment document was signed by the NWS Director on November 14, 2016 and then publically released on December 6, 2016.

Hurricane Matthew Service Assessment

From Haiti to North Carolina, Hurricane Matthew

left a trail of destruction. The hurricane hugged the east coast of Florida, tracking northward, and making landfall in North Carolina. It was strongest for the United States while in the vicinity of Florida; however, its most powerful winds remained just off the coast. Port Canaveral, Florida observed the highest observed gust in the United States of 107 mph. In the southern United States, enormous amounts of rain and the subsequent flooding induced the greatest damage. Savannah, Georgia received 17.49 inches of rain. In eastern North Carolina, 10-15 inches of rain fell resulting in catastrophic flooding. Storm surge flooded roads, homes, and businesses along the coast. The highest recorded storm surge was 7.8 feet above the ground in Fort Pulaski, Georgia, near Savannah.

The service assessment team was deployed on October 31, 2016 and provided the first draft of its report to the NWS's Performance and Evaluation Branch in January 2017. The Branch is conducting its second editing pass, which will be adjudicated with the assessment team. Afterward, the document will be returned to NWS Headquarters and shared with subject-matter experts (SMES), affected regions, and NCEP for a review and deeper dive into the content.

Winter 2016-17 Edition

Status of Service Assessment Action Items

Summary

- There are **308** total actions from open events.
- 241 actions are closed.
- 67 actions remain open
- In addition, there are **33** new actions from the release of The Historic Nor'easter of January 2016 Service Assessment document and pending actions from the Hurricane Matthew Service Assessment.

Recent Service Assessments

- 1) <u>The Historic Nor'easter of January 2016 Service Assessment</u>: The Historic Nor'easter of January 2016 Service Assessment document was publically released on December 6, 2016.
- 2) <u>Hurricane Matthew Service Assessment</u>: The Hurricane Matthew Service Assessment team was deployed on October 31, 2016 and has completed the first draft of the report.

Open Service Assessments

- ⇒ South Carolina Historic Flooding of October 2-5, 2015 Released July 28, 2016
 44 Total Actions, 1 Unassigned, 11 (26%) Closed Actions 32 (74%) Open Actions
- ⇒ Colorado Flooding of September 11-17, 2013 Released June 24, 2014
 26 Total Actions, 21 (81%) Closed Actions
 5 (19%) Open Actions
- ⇒ May 2013 Oklahoma Tornadoes and Flash Flooding Released March 21, 2014
 29 Total Actions, 20 (69%) Closed Actions
 9 (31%) Open Actions
- ⇒ Hurricane and Post-Tropical Cyclone Sandy, October 22-29, 2012 Released May 05, 2013 25 Total Actions, 24 (96%) Closed Actions 1 (4%) Open Actions
- ⇒ Historic Derecho of June 29, 2012 Released February 05, 2013
 14 Total Actions, 9 (64%) Closed Actions
 5 (36%) Open Actions

- ⇒ Hurricane Irene in August 2011 Released October 05, 2012
 94 Total Actions, 85 (90%) Closed Actions
 9 (10%) Open Actions
- ⇒ The Missouri/Souris River Floods of May August 2011 (Regional Service Assessment) Released June 05, 2012
 29 Total Actions, 28 (97%) Closed Actions
 1 (3%) Open Actions
- ⇒ May 22, 2011 Joplin Tornado (Regional Service Assessment) Released September 20, 2011
 16 Total Actions, 14 (88%) Closed Actions 2 (12%) Open Actions
- ⇒ Spring 2011 Mississippi River Floods Released April 11, 2012 31 Total Actions, 29 (94%) Closed Actions 2 (6%) Open Actions

Last Closed Events (all actions completed)

- Remnants of Tropical Storm Lee and the Susquehanna River Basin Flooding of September 6-10, 2011 (Regional Service Assessment) Released July 26, 2012 11 Total Actions - Closed
- The Historic Tornado Outbreaks of April 2011 Released December 19, 2011 32 Total Actions - Closed
- Washington, D.C. High-Impact, Convective Winter Weather Event of January 26, 2011 Released April 01, 2011 6 Total Actions - Closed
- Record Floods of Greater Nashville: Including Flooding in Middle Tennessee and Western Kentucky, May 1-4, 2010 Released January 12, 2011 17 Total Actions - Closed
- Southeast US Flooding of September 18-23, 2009 Released May 28, 2010 29 Total Actions - Closed
- South Pacific Basin Tsunami of September 29-30, 2009
 Released June 04, 2010
 131 Total Actions - Closed

Updated February 2017 by Freda Walters
Page 14

Winter 2016–17 Edition



Doug Young Editor Performance and Evaluation Branch Chief NWS Headquarters Douglas.Young@noaa.gov

> <u>Beth McNulty</u> Performance and Evaluation Branch NWS Headquarters Aviation Performance and Verification <u>Beth.Mcnulty@noaa.gov</u>

Chuck Kluepfel Performance and Evaluation Branch NWS Headquarters Verification Lead <u>Charles.Kluepfel@noaa.gov</u> <u>Sal Romano</u>

Performance and Evaluation Branch NWS Headquarters Service Assessment and Evaluation <u>Salvatore.Romano@noaa.gov</u>

<u>Freda Walters</u> Co-Editor and Designer Performance and Evaluation Branch NWS Headquarters Service Assessment and Evaluation <u>Alfreda.Walters@noaa.gov</u>

> <u>Web Link</u> Stats on Demand: <u>https://verification.nws.noaa.gov</u>

Questions and comments on this publication should be directed to Freda Walters.

