

Hydrometeorological Prediction Center 2007 Accomplishments Report

I. Introduction

The Hydrometeorological Prediction Center (HPC) made progress on several fronts during 2007. Collaboration between HPC forecasters and National Weather Service (NWS) field offices continued to increase with HPC providing an early peak at HPC guidance via chat software. HPC began providing gridded guidance to the Alaska Region. As in past years, HPC successfully forecast several significant weather events.

2. Major Accomplishments

Alaska Desk Established – In December HPC began providing guidance forecasts for the Alaska Region. The suite of products, modeled after those provided to the CONUS field offices, includes gridded sensible weather forecasts for days four through eight, surface prognostic charts, and a technical discussion. This marks the first expansion of HPC guidance products outside of the CONUS ([see photos below](#)).

HPC Conducted Backup of the Tropical Prediction Center (TPC) - On July 24, HPC backed up the TPC in a scheduled test for the East Pacific basin. HPC issued products and forecasts for Tropical Storm Dalila for a 12 hour period. The test was successful with all operational products issued by HPC.

HPC Meteorologist Travels to SPC to Train Staff and Test Backup Capability - Bruce Sullivan, Senior Branch Forecaster at HPC, trained staff at SPC for QPF backup, and tested the capability of transmitting the forecasts from the SPC. The staff was able to generate the QPF graphics and issue the QPF Discussion product from SPC successfully on July 19. Mike returned to SPC in September to continue the training of SPC meteorologists as the backup center for HPC's QPF program.

Visiting Forecaster Program Begins at the HPC - During the week of March 5, the HPC hosted the first of ten Visiting Forecasters from the NWS field offices. Dan Smith, Senior Forecaster, WFO, Lincoln, IL sat with meteorologists at each of the HPC operations desks and learned about the many tools used in preparing the forecast guidance and analyses from HPC. The Visiting Forecaster program was initiated this year by NCEP to help increase the collaboration with the NWS field offices, especially in the areas of winter weather, medium range, and quantitative precipitation forecasting. NCEP pays for half of the travel and per diem costs of the trips. Other forecasters who

participated in this program are: Brad Bryant, Jackson, MS; Jason Caldwell, LMRFC; Mike Richter, Huntsville, AL; Jim Wallman, Reno, NV; Gail Hartfield, Raleigh, NC; Ernie Ostuno, Grand Rapids, MI.

HPC - River Forecast Center (RFC) Visiting Forecaster Program Continues in FY07 - The NWS AHPS program provided funding to continue the HPC/RFC visiting forecaster program in FY07. The program brings RFC hydrologists to the HPC and sends HPC forecasters to RFCs. These two or three day trips help RFC hydrologists learn more about HPC precipitation forecasts so they can be more effectively used at the RFC. In addition, HPC forecasters gain a better understanding of RFC operations. This was the fifth year for this very successful program.

Outreach, conferences, and visitors

HPC Meteorologists Visited several Schools where they gave presentations offering a general introduction to the science of meteorology and the activities of a forecaster in the NWS.

HPC Meteorologist at Winter Weather Workshop - Joshua Scheck, HPC meteorologist, represented HPC at the Winter Weather Workshop in Shreveport, LA January 16-17. The conference was attended by forecasters from several neighboring WFO's, as well as emergency managers, university professors, military, and television meteorologists

HPC Meteorologists Participated in Career Shadowing Day - Five students from Waldorf, MD participated in Career Shadowing Day in early February by spending the day with HPC meteorologists. The students were able to see how a national center generates forecasts, and they also had an opportunity to spend some time with NESDIS.

HPC Forecaster Speaks to Rotary - Rachel Trimarco, HPC forecaster, attended a regular meeting of the Bladensburg, MD Rotary Club in February to give a Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS) presentation and recruit potential participants. Rachel is the local county coordinator for this program which has been a great source of data for forecasters around the country.

Headquarters Staffers Visits the HPC - HPC initiated a program encouraging familiarization visits by NWS Headquarters staffers to the daily forecast operations at the World Weather Building. During their day at the World Weather Building, they meet and work with HPC operational, development, and management staff and participate in HPC's daily map discussion.

HPC Director Meets with Students - Jim Hoke, HPC Director, traveled to Chambersburg (PA) High School to talk with senior students on April 27. The purpose of the visit included discussing career opportunities in NOAA and the importance of being prepared for environmental emergencies.

TPC Senior Hurricane Specialist Conducts Seminars at HPC - James Franklin from the TPC came to HPC in late April to conduct seminars and a workshop on several topics pertinent to tropical cyclone forecasting. James specifically discussed model performance, QuikSCAT application, and aircraft reconnaissance winds. This was done as part of the ongoing HPC training program related to the HPC role as official backup Center for the National Hurricane Center.

HPC Forecaster Mentoring High School Student - Mike Eckert, Senior Branch Forecaster at HPC, has been mentoring an advanced high school student for more than a year. Kyle Griffin, a senior at Liberty HS in Bealeton, VA, career shadowed Mike, on April 19.

NWS Alaska Pacific Region Forecasters Visit the HPC - WFO Anchorage, AK forecasters Shaun Baines and Bill Ludwig and Tom Birchard, forecaster and marine focal point at WFO Honolulu, HI visited HPC on May 9. They were given tours of the Center and sat with some of the HPC forecaster to learn about the forecast activities at HPC.

HPC Meteorologist Attends Canadian Meteorological Center (CMC) Ensemble Training - Joshua Scheck of HPC participated in a model ensemble training session held in May by the CMC in Toronto. CMC ensembles have become available to HPC forecasters to use in addition to the NCEP ensembles.

HPC Meteorologist Continues Involvement with CoCoRaHS - Bruce Sullivan, a Senior Branch Forecaster with HPC, continues to give many presentations and has spoken at many recruitment events for the Community Cooperative for Rainfall, Snow, and Hail network.

HPC Participates in SPC Spring Experiment - HPC Development and Training Branch Meteorologist, Keith Brill, participated in the NOAA Hazardous Weather Testbed (HWT) 2007 Spring Experiment from 7-9 May, at the SPC in Norman, OK. This six-week experiment seeks to include a diverse group of participants to evaluate several high-resolution model runs having 2-km to 4-km horizontal resolution and a ten-member Storm Scale Ensemble Forecast (SSEF) running at 4-km resolution. The ultimate goal is to improve forecasts of severe weather associated with convective storms

River Forecast Center (RFC) Hydrologists Visit HPC - HPC hosted the national meeting of Hydrologists In Charge on July 25. The purpose was to introduce the RFC management to the programs of HPC, and for the hydrologists to recommend to HPC items to consider for future development.

HPC Meteorologist Visits Alaska RFC - Joshua Scheck, HPC meteorologist, spent a week at the RFC in Anchorage in August familiarizing himself with Alaskan RFC procedures and needs, and giving the Alaska RFC, Weather Forecast Office and Alaska Region Headquarters staff a briefing on programs of HPC.

HPC Incident Meteorologist (IMET) Involved in Zaca Fire in California - Pamela Szatanek, HPC meteorologist and IMET, spent 10 days in August working the Zaca fire in California. This was the second fire for Pam in 2007 as HPC is doing their part to support the NWS fire weather program in this very difficult fire season.

HPC Meteorologist Participates in Symposium on South West Hydrology - David Roth, HPC Meteorologist, gave a presentation on Tropical Cyclone Precipitation at the 4th Annual Symposium of Southwest Hydrology in Tucson, AZ in September. David has developed an extensive on-line climatology for tropical cyclone precipitation, including Mexican data and the southwest United States.

HPC Meteorologist Visits Alaska - Robert Kelly, Chief of the Forecast Operations Branch at HPC, visited Alaska in September as a member of the team to develop the Alaskan Medium Range Forecast Program. He visited and worked with the staff of WFOs Juneau and Anchorage, as well as the Alaskan Region Headquarters and the Anchorage RFC. He also gave a presentation to the Anchorage AMS chapter on the programs and products of HPC.

HPC Participates in Annual Meeting - Michael Brennan, HPC Science and Operations Officer (SOO), attended the 32nd Annual Meeting of the National Weather Association (NWA) in Reno, Nevada in October. He participated in a joint panel discussion on the effort to transition satellite ocean vector wind data from research to operations at National Centers for Environmental Prediction (NCEP). While there, Mike interacted with numerous other NWS personnel, as well as other members of the NWA community from the broadcast, private, and research sectors.

Meetings with Key Partners and Stakeholders - Michael Brennan, HPC SOO, attended the 9th Northeast Regional Operational Workshop in Albany, New York, from November 7 - 8. He gave a presentation providing an overview of the HPC winter

weather desk (WWD) and its products, along with WWD verification results from 2006-2007. Mike also presented a second talk prepared by three other HPC staff members (Steve Flood, Joshua Scheck, and Mike Bodner) on the record-breaking New York/New Jersey flood event from April 15 – 16. This presentation focused on how standardized anomalies of moisture flux and the low-level jet computed from the SREF were used to guide HPC QPF forecasters toward using higher deterministic QPFs in that region two to three days prior to the event.

HPC SOO Attends Workshop - Mike Brennan attended a winter weather workshop at the Washington/Baltimore WFO in Sterling, Virginia, on November 20. He gave a presentation on changes to the HPC WWD products, changes to the SREF, and utility of using potential vorticity (PV) thinking in operations to identify the impact of latent heating in numerical weather prediction model guidance for events such as extratropical cyclogenesis and low-level jets.

Media activities

As in past years, HPC forecasters provided interviews to numerous media outlets throughout the year, including radio, television, and the print media. CNN radio, National Public Radio, and several other national networks contacted HPC for live or taped interviews several times each month. Mike Davison, of the HPC International Desks provided many interviews in Spanish.

International Desks

The HPC International Desks is a training desk designed to train meteorologists from South and Central America and the Caribbean Basin in the techniques of weather analysis and forecasting ([see photo below](#)). Due to the large number of forecasters trained, over 200, and the extensive training International Desks Coordinator Mike Davison has provided at workshops and international meetings, Mr. Davison, has excellent contacts within the meteorological services of the countries served. When weather events are likely to have a significant impact, Mr. Davison is frequently contacted by former visiting scientists for his expertise. On many occasions, Mr. Davison has been proactive in contacting the foreign meteorological services in order to ensure they were prepared for significant weather events. See photo.

HPC International Desks Provided Support to the Argentine Navy - During the week of February 18 two Argentinean Navy supply ships on a re-supply mission to the Antarctic Peninsula became disabled while in transit. One of them struck ice, piercing the hull, creating a serious situation. The NWS server providing detailed model output to international users became unavailable during this time. Due to the prolonged period without data, the Argentinean Navy approached Mr. Michel Davison, Director NWS

International Desks, with an urgent request for assistance in obtaining the model output. Mr. Davison assisted them with detailed instructions on how to obtain and process the data from an alternate NCEP server. The prompt response and assistance provided by Mr. Davison enabled the Argentinean Navy forecasters to provide accurate and timely weather information leading to the successful recovery of both ships.

HPC International Desks Director Participates in Workshop in Argentina - Under the auspices of Argentina's Servicio Meteorológico Nacional (SMN) and the Servicio de Hidrografía Naval (SHN), Mike Davison, HPC International Desks Director took part in a US National Weather Service/World Meteorological Organization (WMO) sponsored two-week long training workshop for meteorologists in Buenos Aires, Argentina. The focus of the training was "advanced operational training on application of numerical weather prediction."

HPC International Desks Director Leads One Day Workshop - Michel Davison, HPC International Desk Director, was the primary speaker at a one day NOAA sponsored numerical weather prediction training session held in San Antonio Texas, on January 11. The workshop was organized by the NWS International Activities Office. The emphasis of the workshop was on the application of numerical guidance for precipitation forecasting. Over 40 participants attended from approximately 32 countries. Most of the participants were high level managers or directors of their respective meteorological services. Among the participating directors, were three former students and graduate fellows from the HPC International Desks. Comments from the participants show that the workshop was a success

3. Awards

2007 Isaac Cline Regional Award Winners

Hydrometeorology: David Roth, for developing online tropical cyclone rainfall climatology.

Outreach: Bruce Sullivan – Bruce was responsible for recruiting over 200 weather observers in Maryland in his role as Community Collaborative for Rain, Hail, and Snow (CoCoRaHS) network State Coordinator for Maryland, Virginia, and Washington D.C.

Support Services: Crystal Rickett – Crystal has provided outstanding administrative and budgetary support to both HPC and OPC where she is responsible for monitoring the budget and property inventories for over 70 federal employees and contractors.

Leadership: Dan Petersen – Dan has provided extraordinary leadership in the creation and expansion of the HPC winter weather program, a mainstay of the NWS warning and forecast products.

Local (HPC) Isaac Cline winners:

Alan Robson in Engineering for the excellent manner in which he supported the IT functions of the HPC.

Mike Bodner for Leadership in the transfer of science and technology into HPC operations.

4. Illustrations and pictures of HPC staff and events



Alaska Desk forecaster Joshua Scheck at the recently formed Alaska Desk.



Joshua Scheck at work in the Alaska Desk.



Michel Davison, International Desks Coordinator, provides instruction to visiting scientists from Central and South America.