



NOAA RESEARCH • ESRL • PHYSICAL SCIENCES DIVISION

Developing Data Tools and Products in Support of Research to Applications

Allen B. White

Science Review
12-14 May 2015
Boulder, Colorado

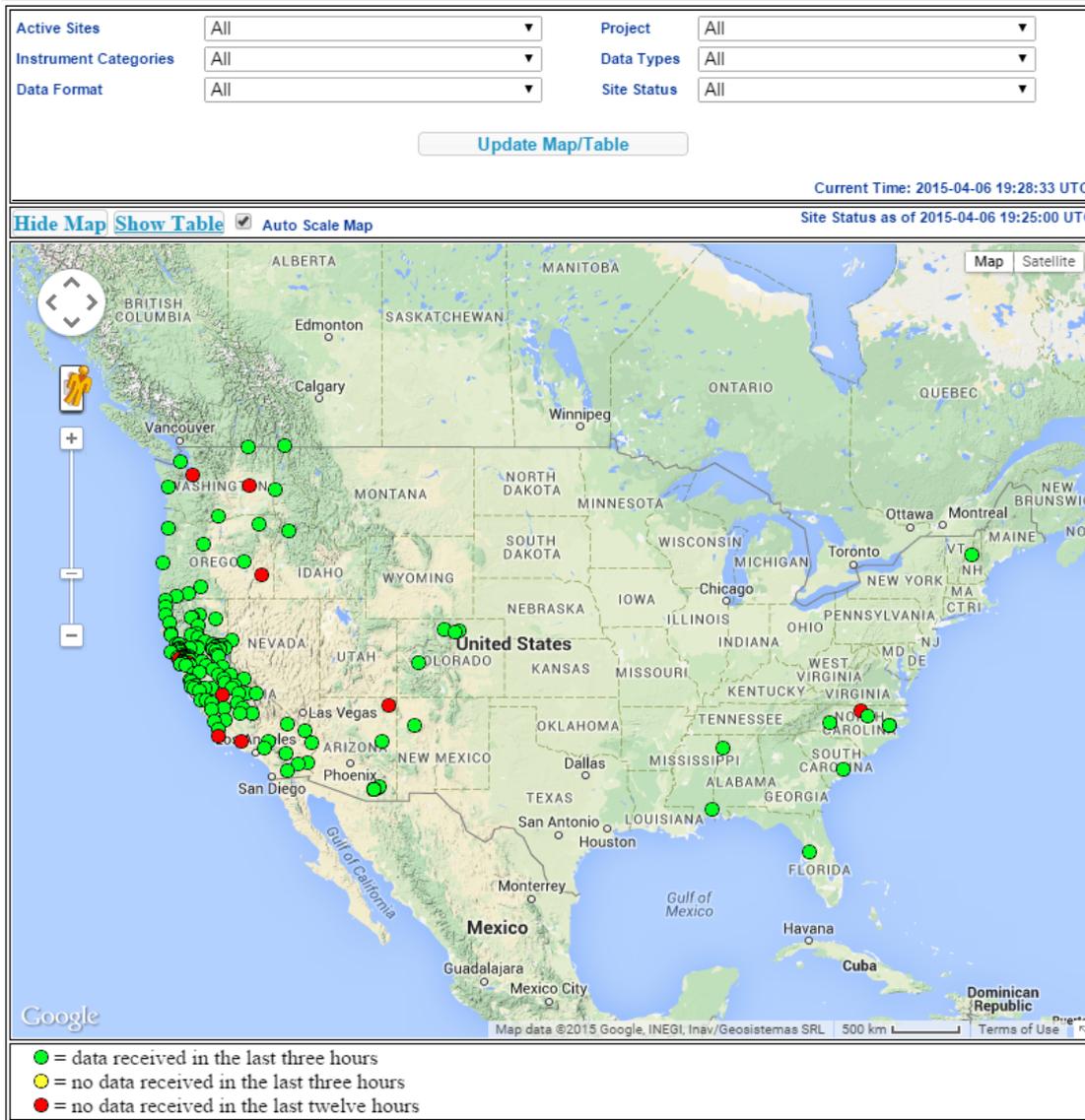


Outline

- **Share and Share Alike**
 - Where to go for access to PSD's Hydrometeorology Testbed (HMT) observations
- **Two examples of specialized data displays that add value to PSD and NOAA baseline observations/models**
 - The award-winning Water Vapor Flux tool gets a face lift
 - Chardonnay anyone? An automated frost/heat forecast tool for viticulture applications
- **Summary**

Tim Coleman
Dan Gottas
Dave Reynolds





- Access to PSD’s real-time and archived HMT observations:
<http://www.esrl.noaa.gov/psd/data/obs/datadisplay/>
- Data also available through MADIS
- Data also shared with NWS Western Region using NWS-specified formats and with the California Data Exchange Center

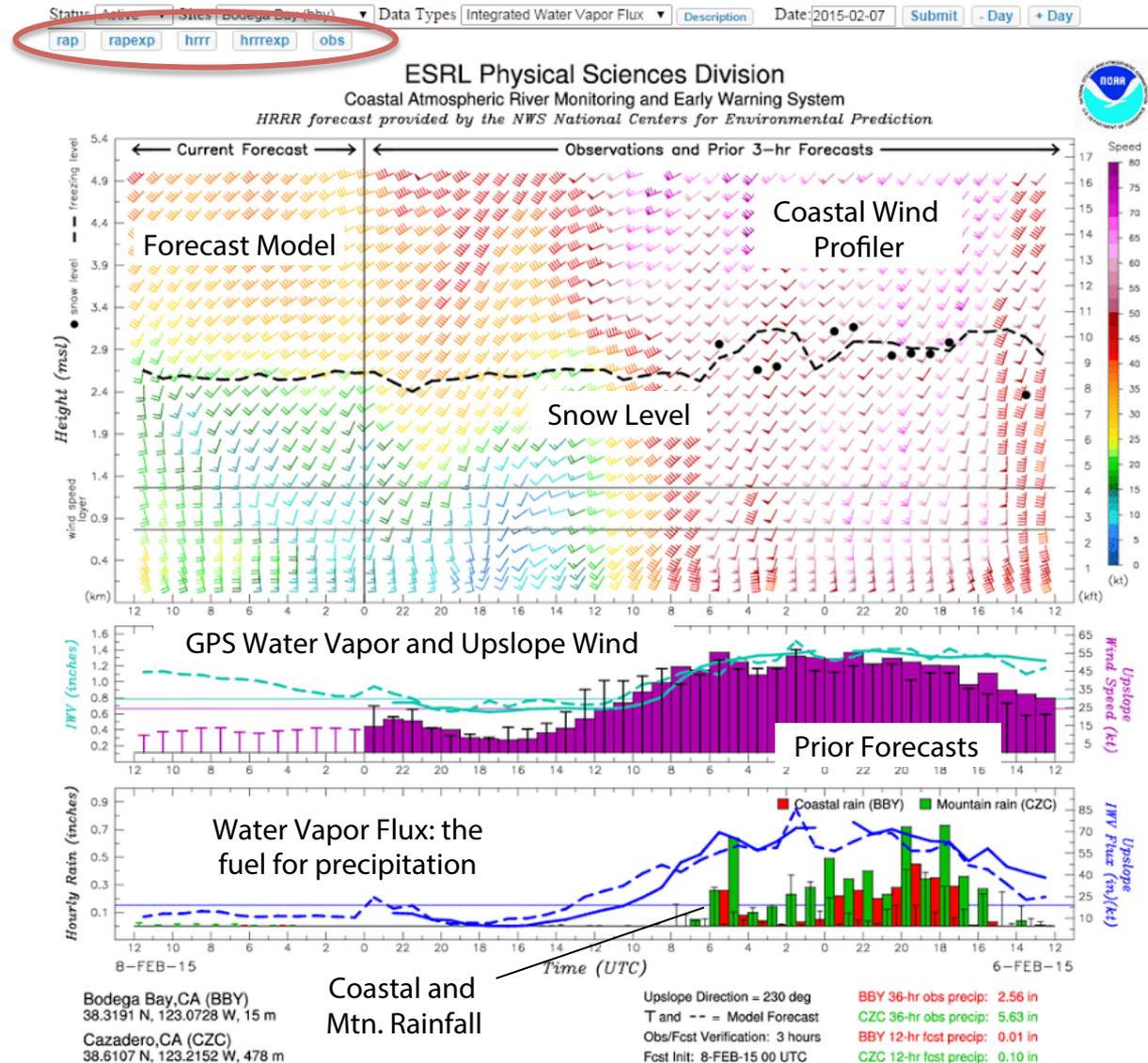


HMT Real-time Water Vapor Flux Tool Display

Now uses HRRR and RAP forecast models

Providing forecasters with the critical integrated observations to determine how Atmospheric Rivers (ARs) are impacting the area and how model forecasts are portraying the AR conditions and orographic precipitation enhancement.

Neiman et al. 2009
 Proc. Inst. Civ. Eng. Water Manage.
 White et al. 2012 (BAMS)



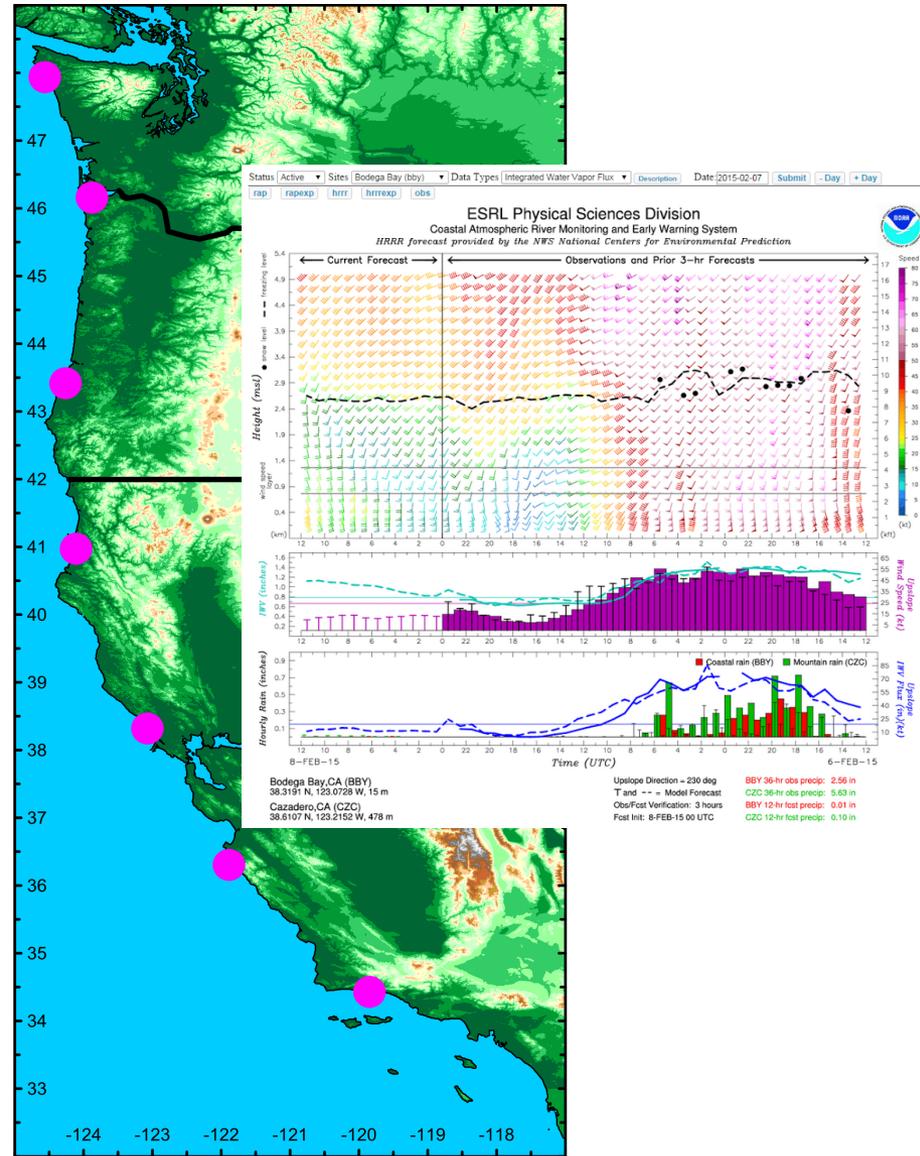
Coming for winter of 2015-16: PSD is installing a “picket fence” of coastal Atmospheric River Observatories along the West Coast for weather and wind energy applications. Funding for the network was provided by the California Dept. of Water Resources and the U.S. Dept. of Energy.



Photo by Clark King, PSD



Photos by Florence Low, CA-DWR



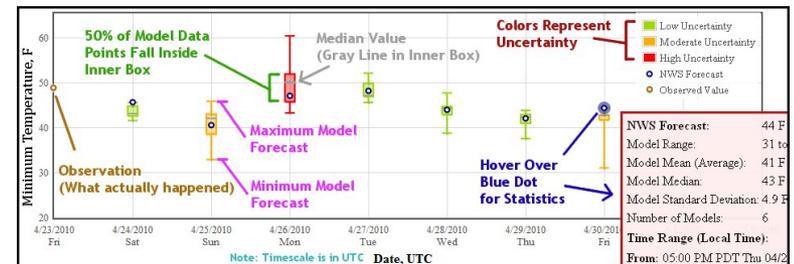
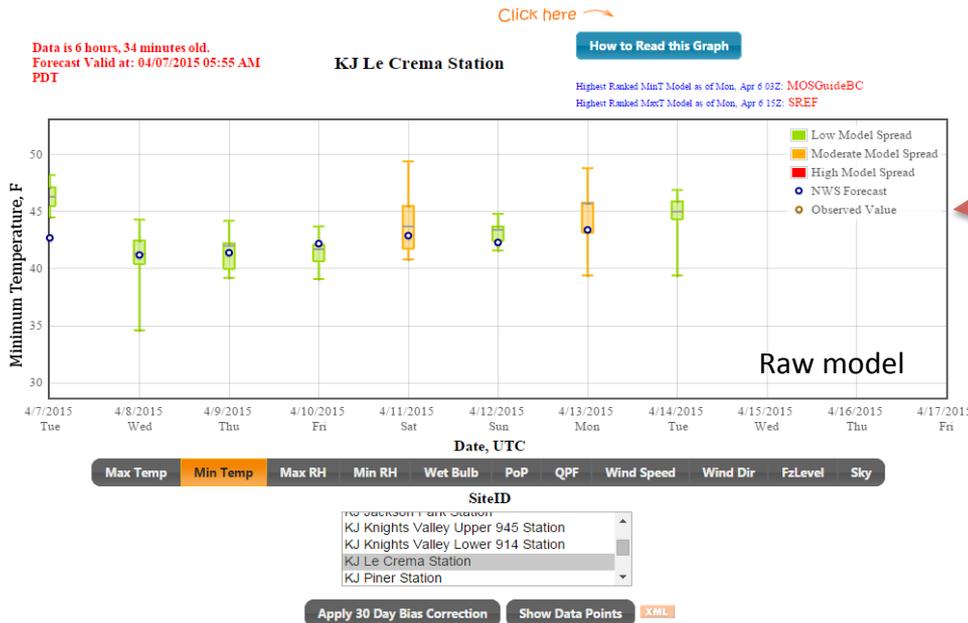
- Current 2.5-km resolution NWS gridded forecasts are too coarse to resolve vineyard microclimates
- NWS developed a bias correction algorithm using currently available surface obs. to “adjust” numerical guidance to the obs. in their Grid Forecast Editor (GFE)
- **PSD Frost Forecast Tool** uses an ensemble of NCEP model forecasts downscaled to 0.5-km grid resolution with bias correction using real-time vineyard data made available through private sector participation

WESTERN WEATHER GROUP ADDRESSING WEATHER RISKS BY PROVIDING PRODUCT SOLUTIONS

Latest Eastern Pacific (R) image | Latest National Radar image

SONOMA COUNTY WINEGROWERS WEATHER FORECAST & DATA

WWG Weather Forecasts Sonoma County Forecast as pdf Sonoma County Frost Forecast as pdf Weather Summary, Eto & PM Outlook 30/90 Day Outlook Forecast Archive Special Weather Statements	Weather Station Data Weather Database Tutorial Sonoma County Station Info & Data Quick Click Summaries Latest Hour Yesterday 7 Day 48 hour Weather Trend Other Weather Data Powdery Mildew Stress 2014 Status (March 1 to date) Archive: 2013, 2012, 2011, 2010	Regional Airport Observations North State - Last Hour (all) Sacramento Valley MesoWest Regional 24 Hour Rainfall Northern California North Bay Season to Date (table)
Sonoma Co Forecast Sponsors FarmAssist, syngenta, American AgCredit, Ranch Systems, CIBER MALINOUSI GROUP	Miscellaneous Info CIMIS Reports General Info Sonoma County Viticulture Beyond Sunburn Other Newsletters Frost Protection Info More Frost Info Other Agriculture Resources NOAA Enhanced Frost Forecast Info Map MaxT MinT MinTw All Model Animation Static 24hr trend Sodar Data Geyserville Enhanced Frost Forecast Review	Climatological Data Climate Summaries North Coast Bay Area Daily Climo Santa Rosa Napa Monthly Climo Santa Rosa Napa Sunrise & Sunset Santa Rosa City Climatography Santa Rosa Western Region Climate Center



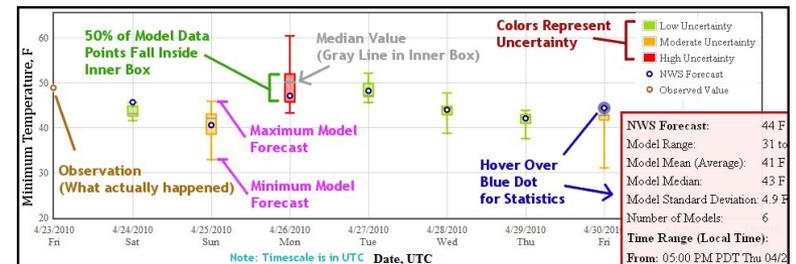
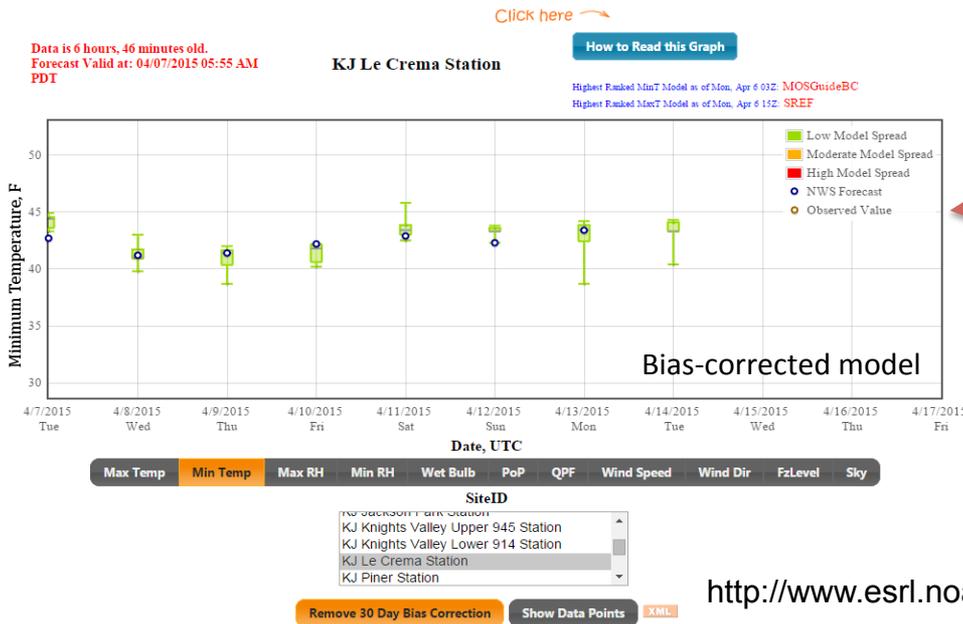
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http://www.esrl.noaa.gov/psd/data/obs/nwspqr/ms/model_spectrum_v2_2.php?

Summary

- PSD shares their observational data and specialized data products with NWS forecasters and the public via the internet and other end user-driven methods
- PSD works with NWS staff and other stakeholders to develop new observation and model forecast tools to aid with NWS and external user decision making
- PSD is in the process of developing in-house AWIPS-2 capability to help expedite the development, testing, and transition of new data and products into NWS operations