NBM V3.0 WCOSS Science Quarterly: Nov 2, 2016

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NBM V3.0 CONUS highlights

- Run every hour (rather than 2x/day) with latest available models.
- Short-Term Blend (Hourly Resolution to 36-h) and Extended Blend (30-264 hours; 3 hourly through 192 and 6 hourly thereafter)
- Add mesoscale models to short-term Blend (HRRR, RAP, SREF, HiResARW, HiResNMM, GLAMP) *FNMOC /NAVGEM in consideration for Extended Blend (may fall to V4.0)*
- 1-36 updates to SBN every hour requested (Extended range to SBN ~4x/day TBD)

NBM V3.0 CONUS highlights

- QPF01 and PoP01 to support Enhanced Short-Term Forecasts
- Mitigate high bias on PoP12 forecasts (Capping the high PoPs using simple field technique for light amounts and extended forecasts)
- Ceiling height/cloud base
- Visibility
- Blended inputs to support Wx, SnowAmt, IceAccum
- Blended wind direction
- Eliminate nearshore clipping; expand domain over oceans to support NWPS

NBM V3.0 OCONUS highlights

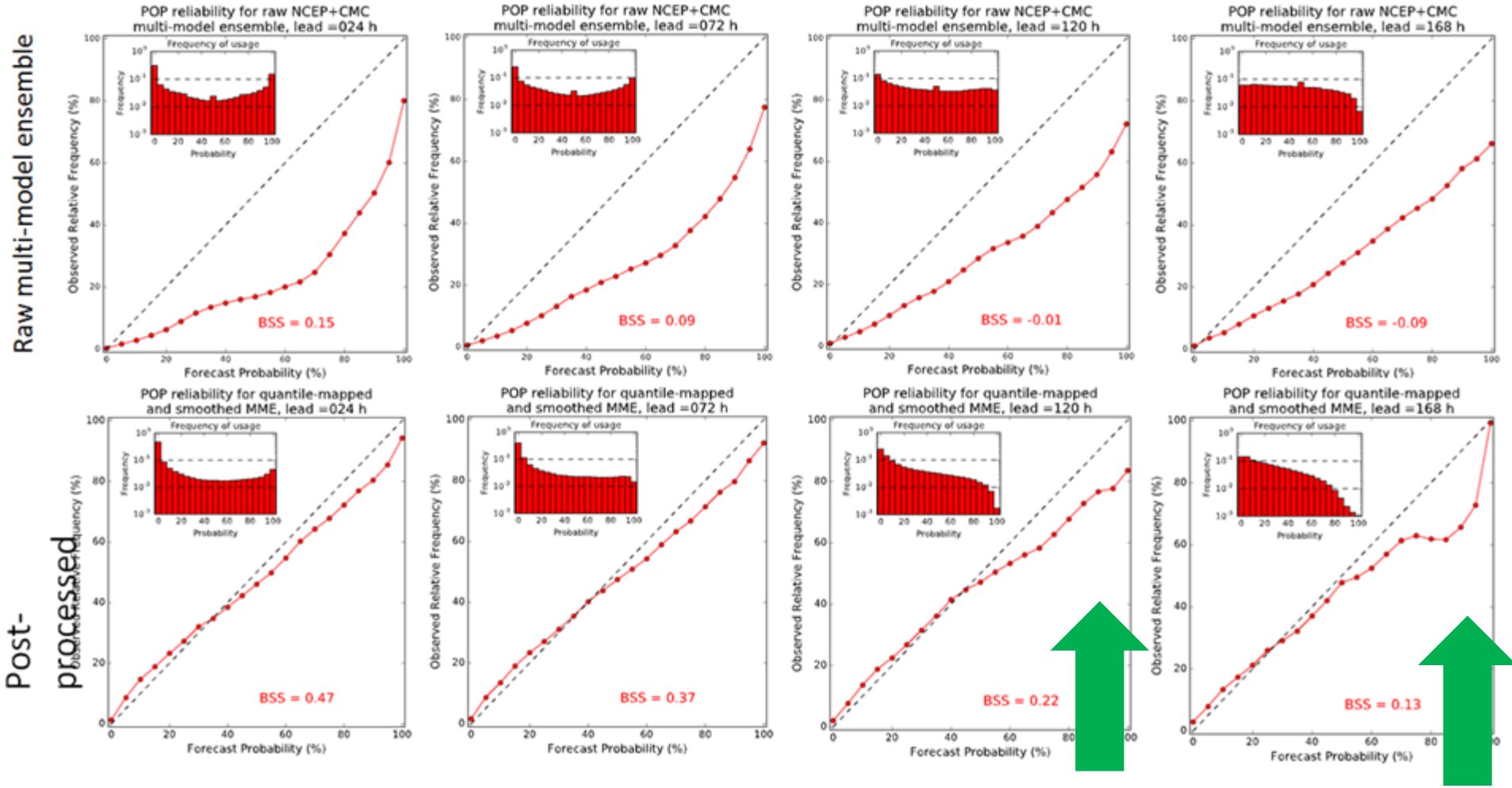
- CCPA QPF ground truth (~13km resolution) currently only covers CONUS, so OAR (Hamill) quantile mapping will be pushed to V4.0+ until URMA or other ground truth becomes available to OCONUS
- As a surrogate, Alaska, Hawaii, Puerto Rico PoP12 and QPF12 will be calculated using field technique
- Blended wind direction

NBM V3.0 Oceanic Grid highlights

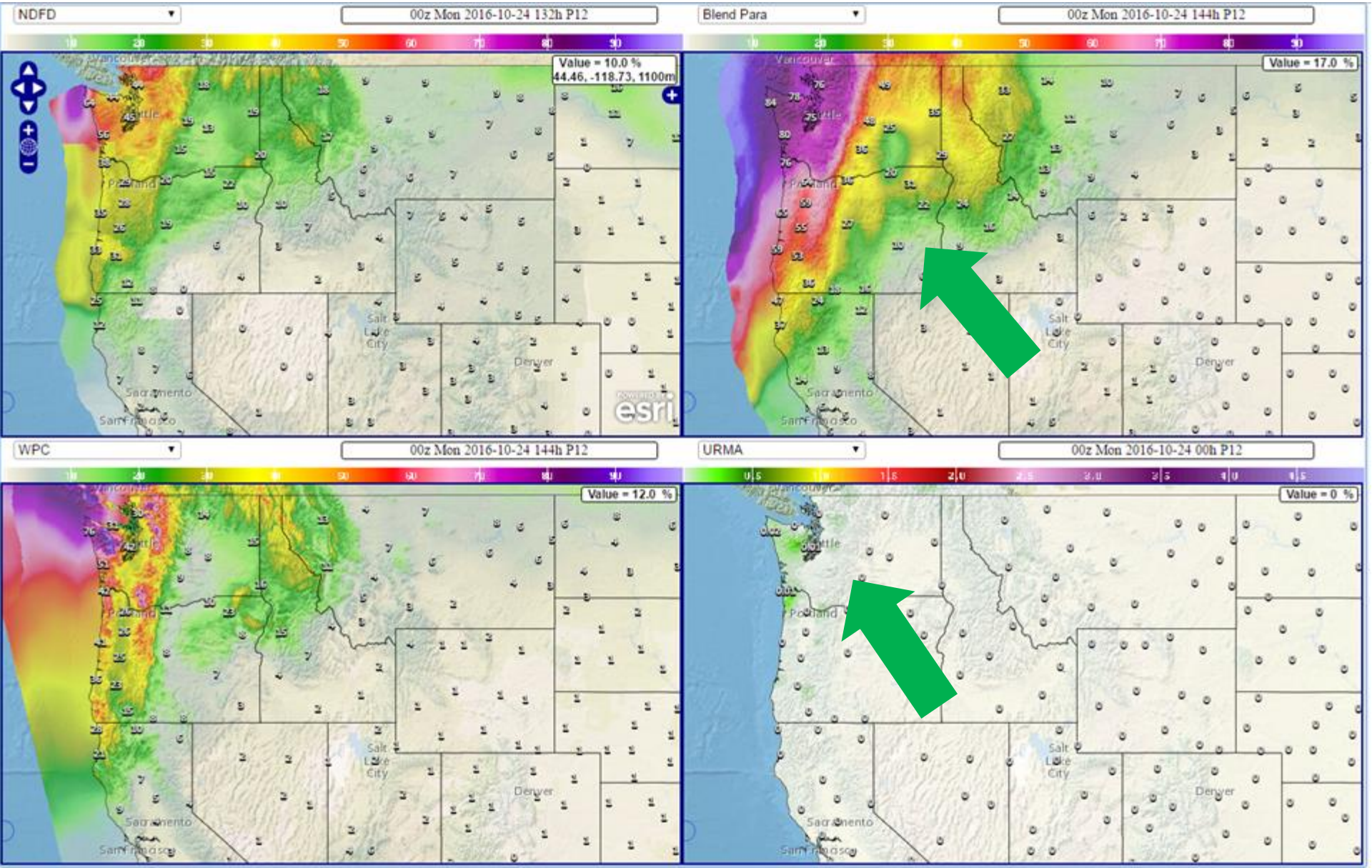
NBM V3.0 Oceanic Winds	**GFS**	**GEFS Mean**	**GEFS Members (All members)**	**CMCE Mean**	**CMCE Members (All members)**	**FNMOC (Version 4)**
Wind Speed (10th Percentile)	✔	✔	✔	✔	✔	
Wind Speed (25th Percentile)	✔	✔	✔	✔	✔	
Wind Speed (50th Percentile)	✔	✔	✔	✔	✔	
Wind Speed (75th Percentile)	✔	✔	✔	✔	✔	
Wind Speed (90th Percentile)	✔	✔	✔	✔	✔	
Wind Direction		✔				

Wet Bias: NAEFS underdispersion

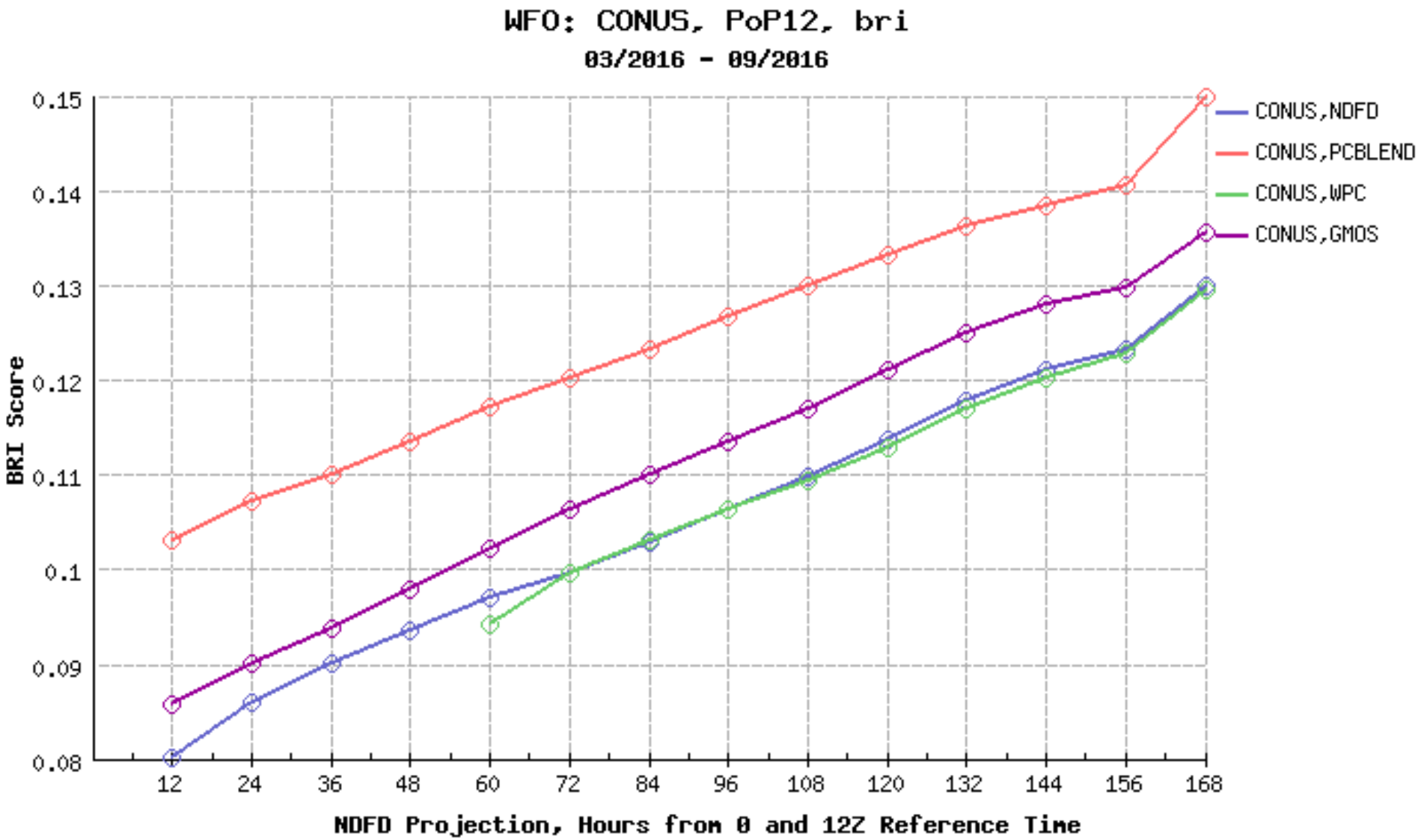
Reliability and skill for 24, 72, 120, 168-h lead times April-June 2016.



Wet Bias: Day 6 80%+ common



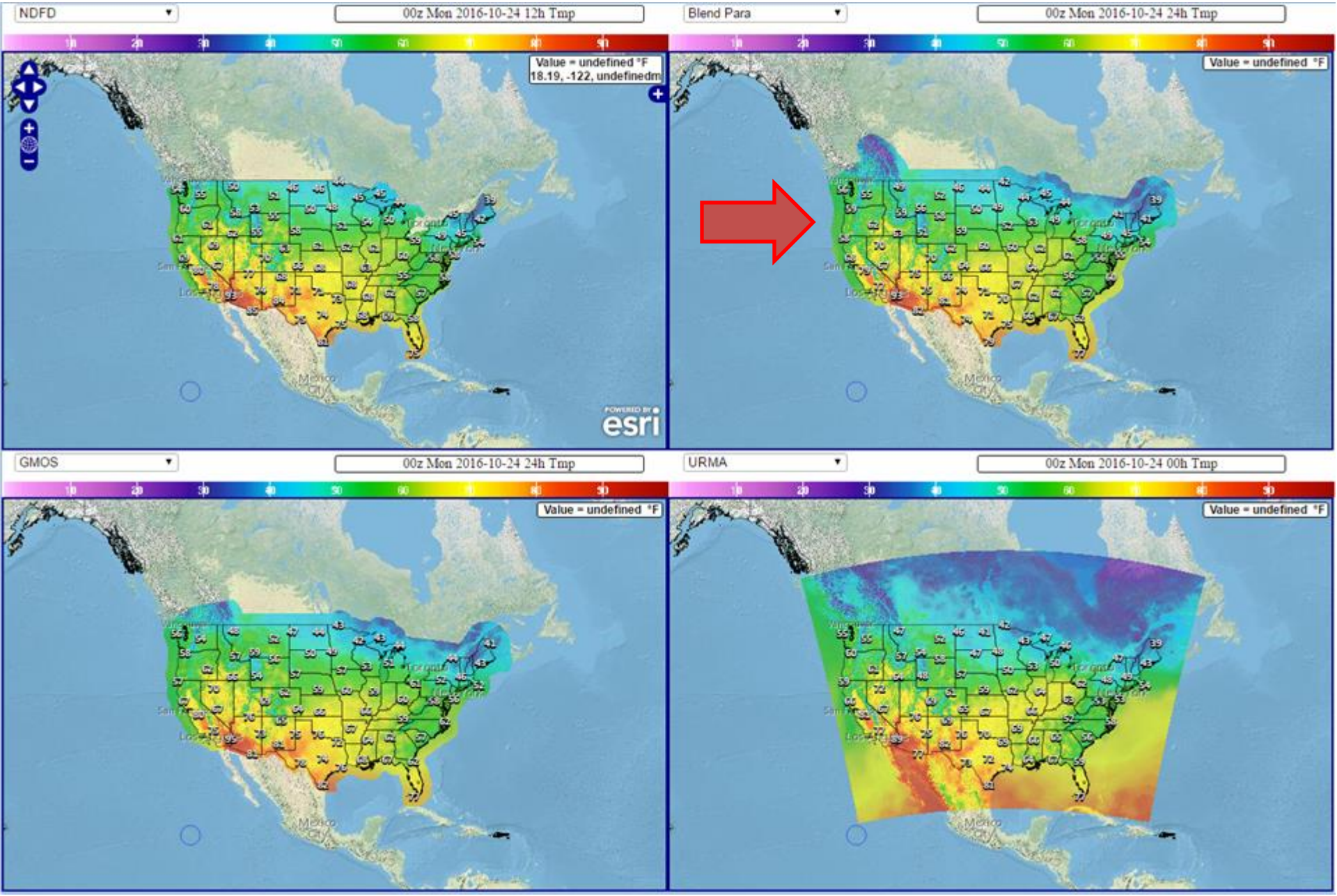
Wet Bias reflected in Brier Scores



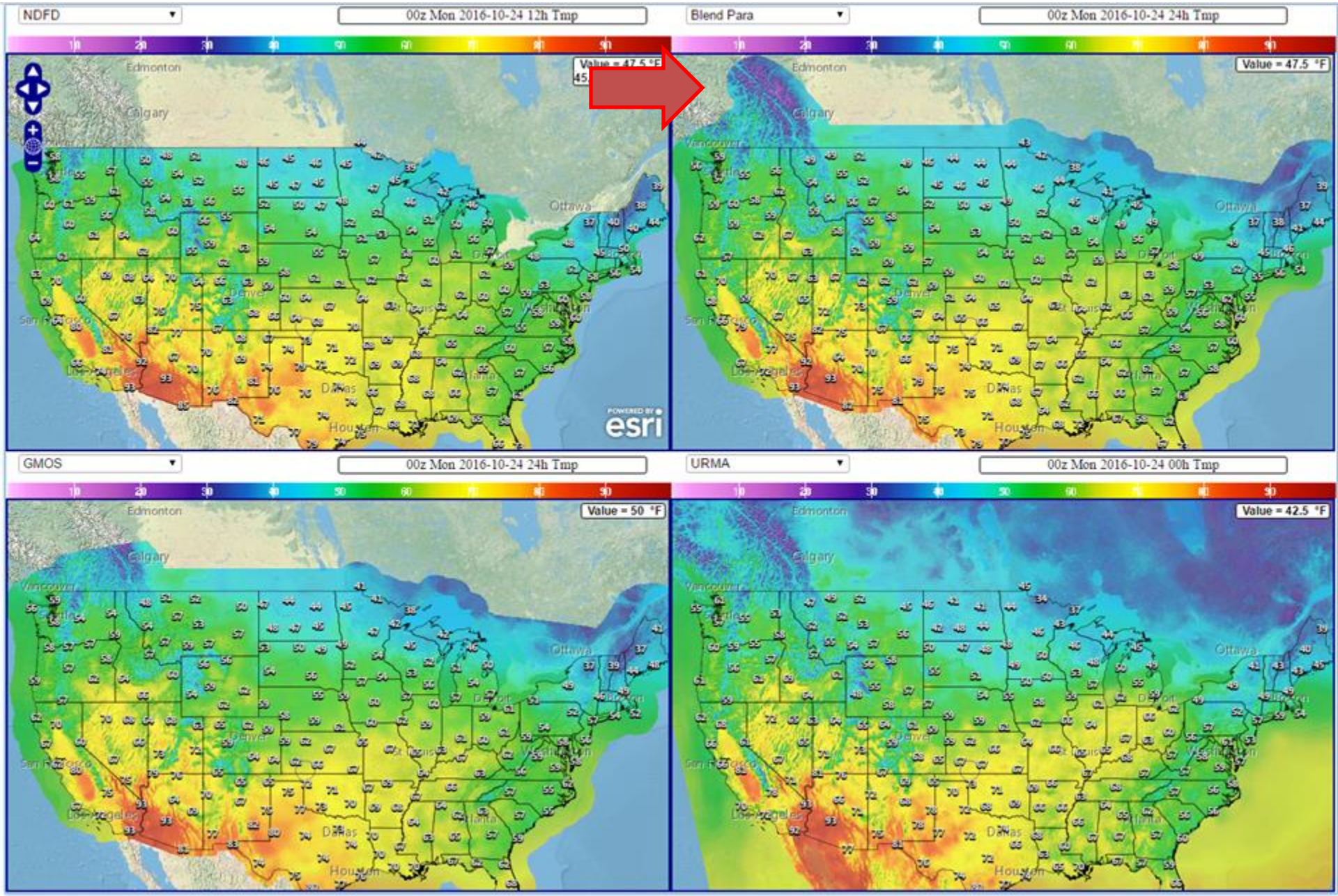
Recent 24 hour forecasts

- Examples to show change from clipped V2.0 to unclipped V3.0 domains over CONUS
- Done to support offshore wind forecasts that enable NWPS wave forecasts
- Also better support to RFCs in Canada

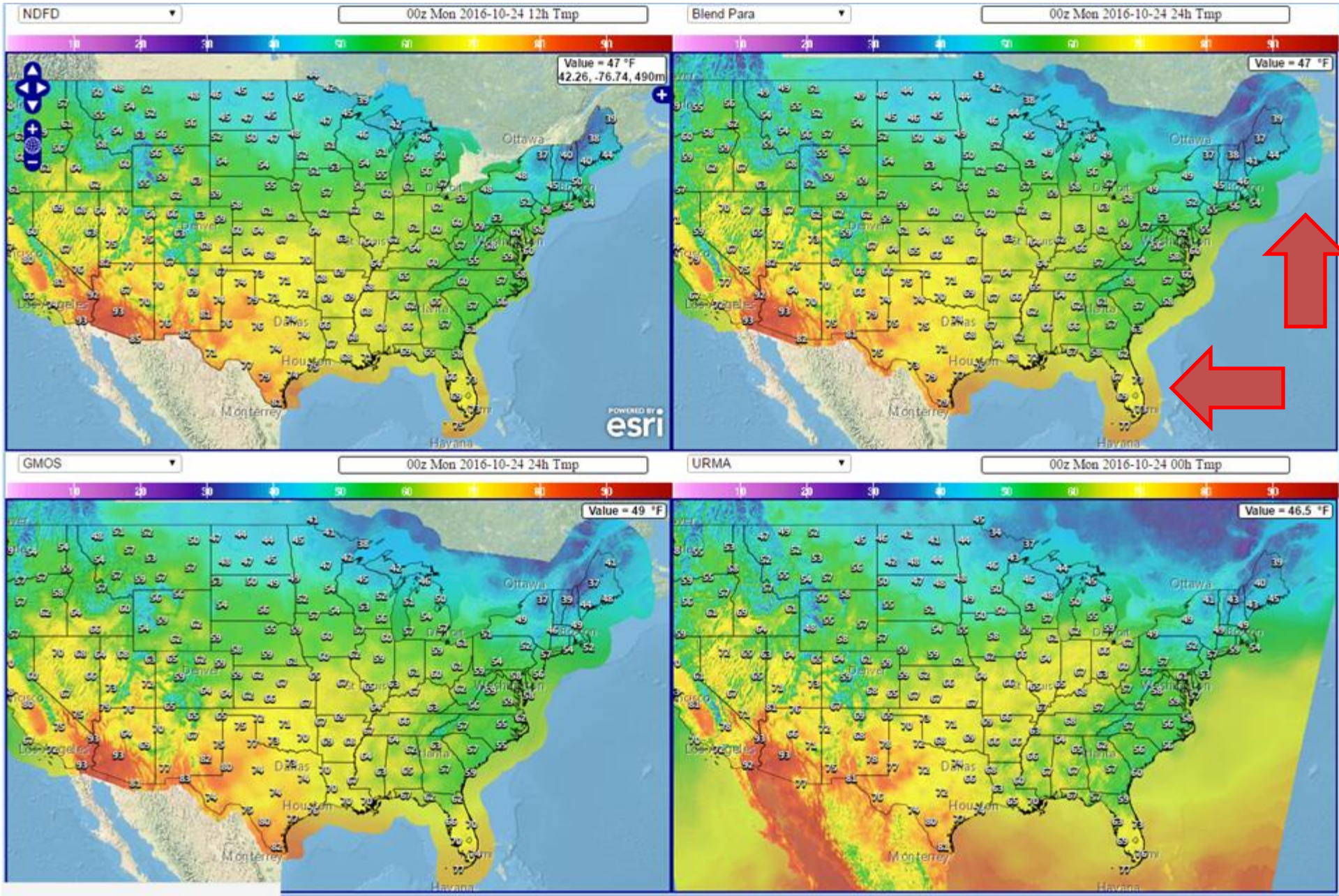
Current NBM V2.0 coverage overview



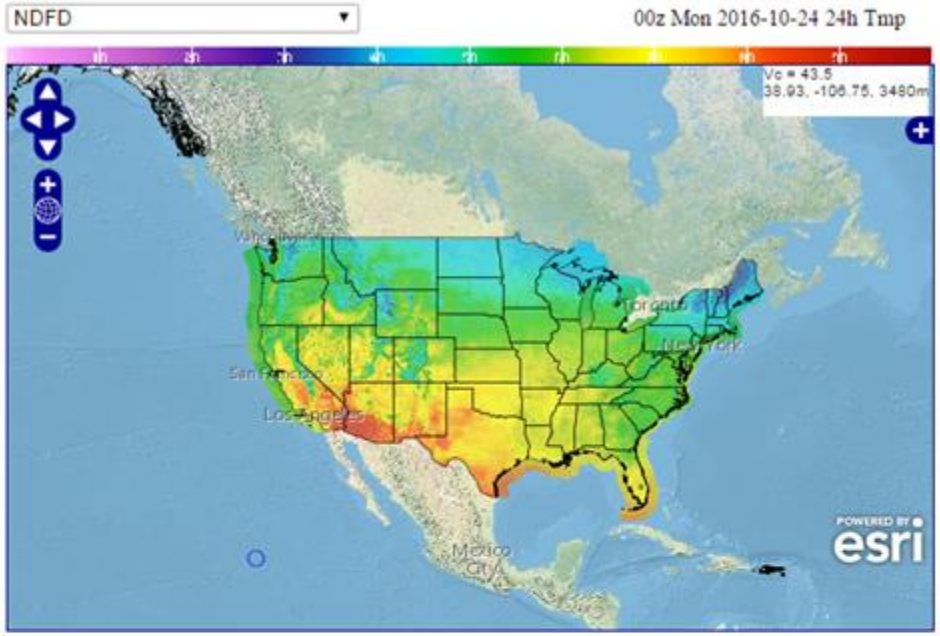
Current NBM V2.0 Zoom NW

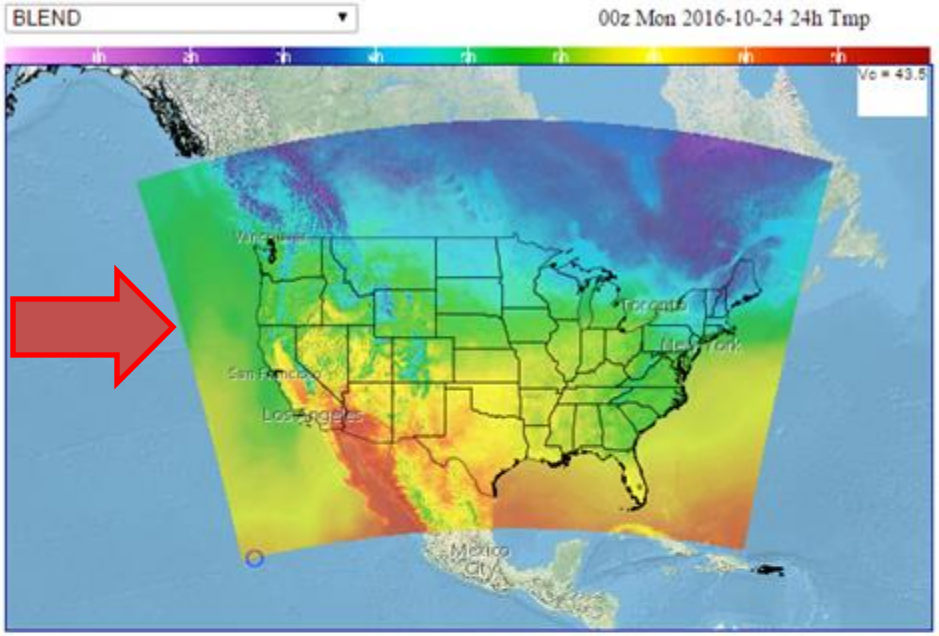


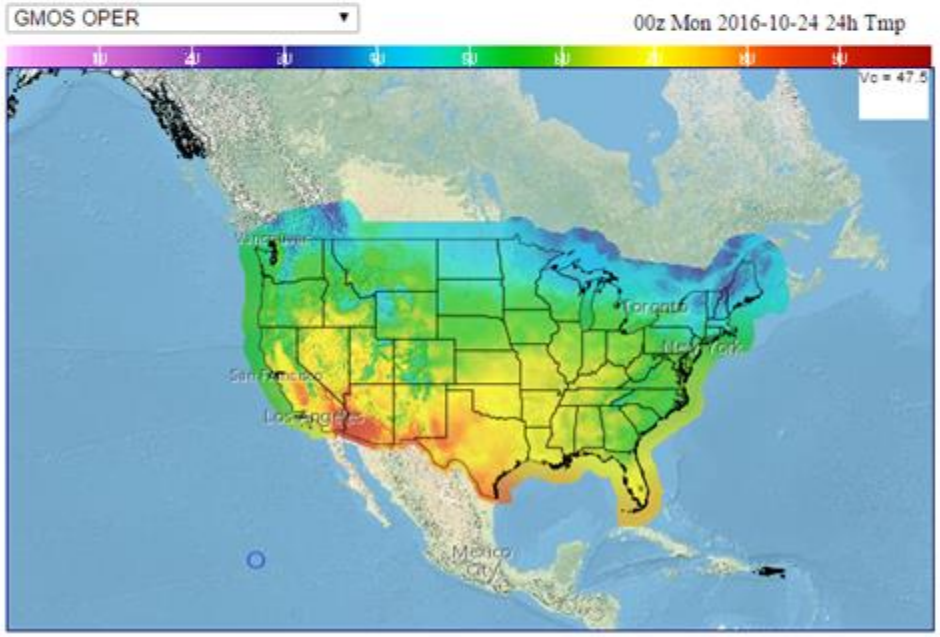
Current NBM V2.0 Zoom SE

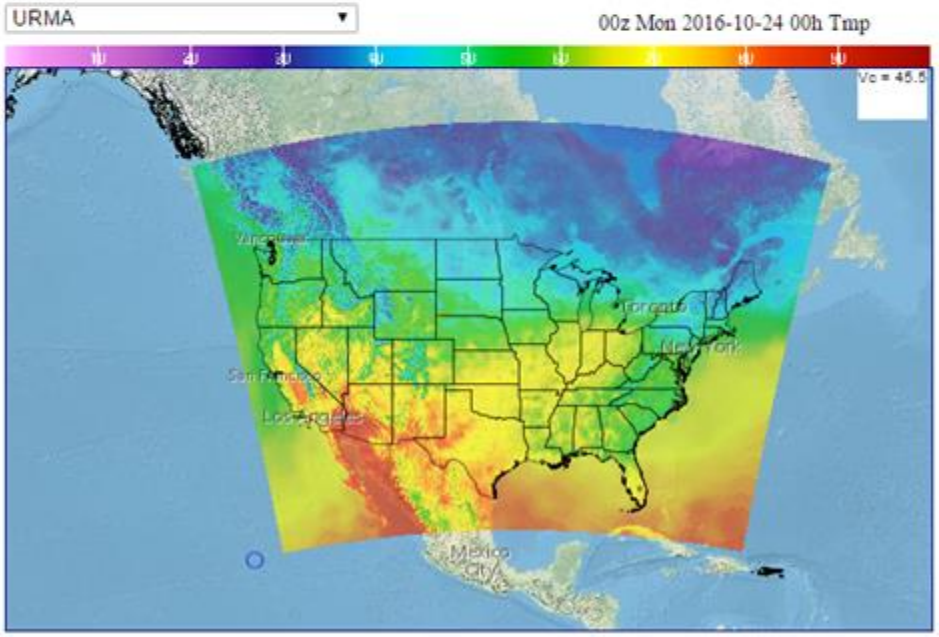


NBM V3.0 coverage: no clipping

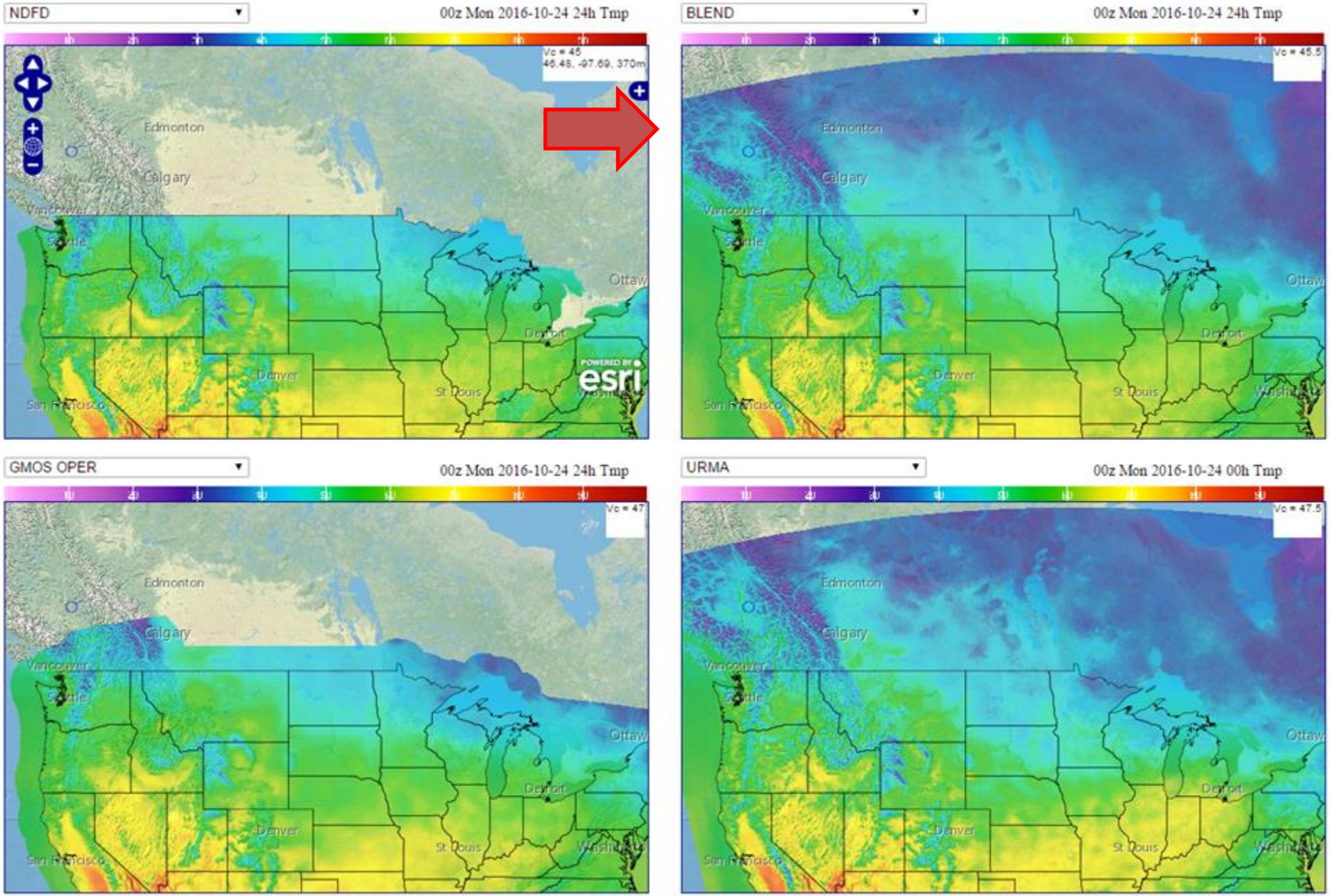




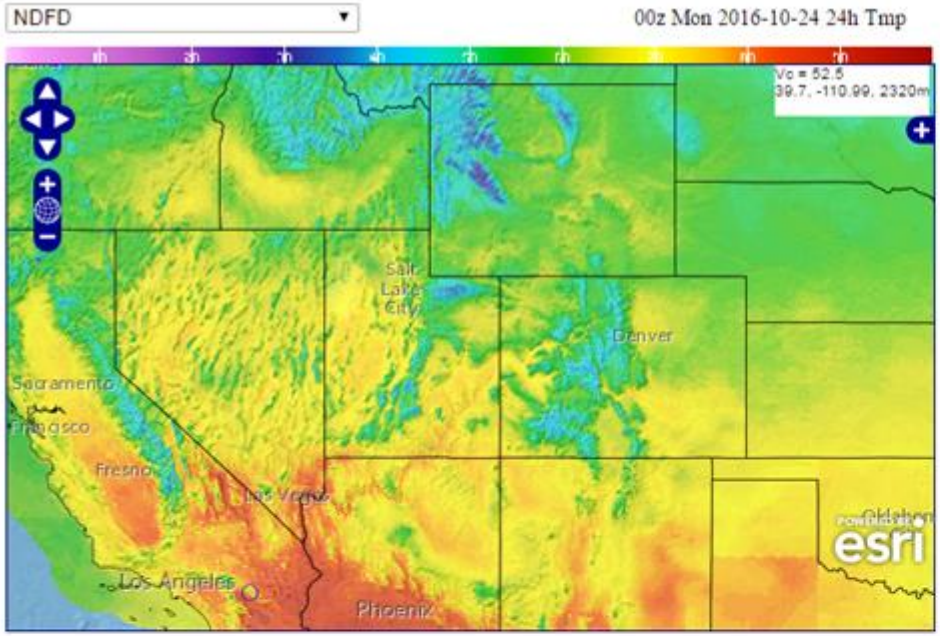


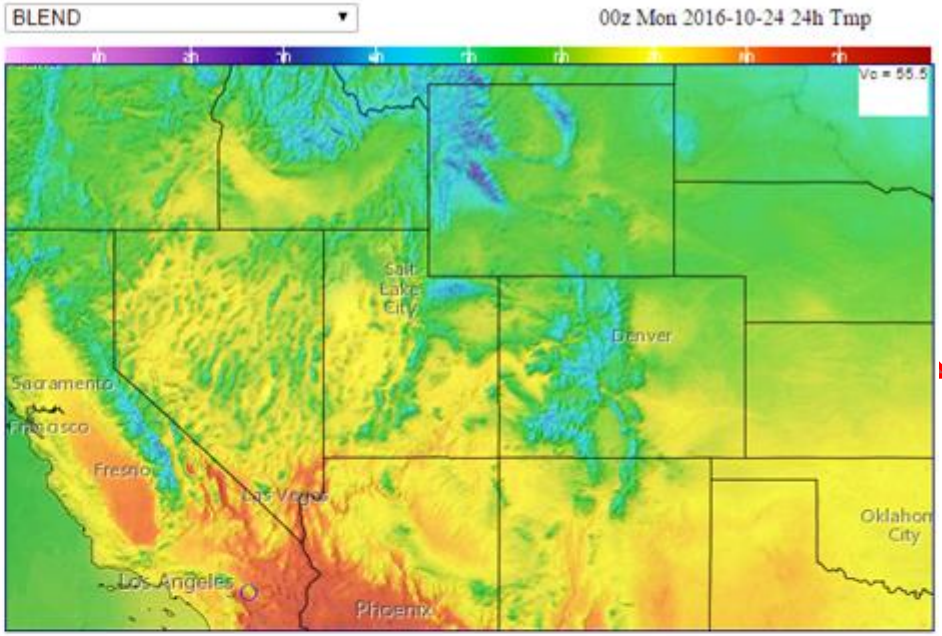


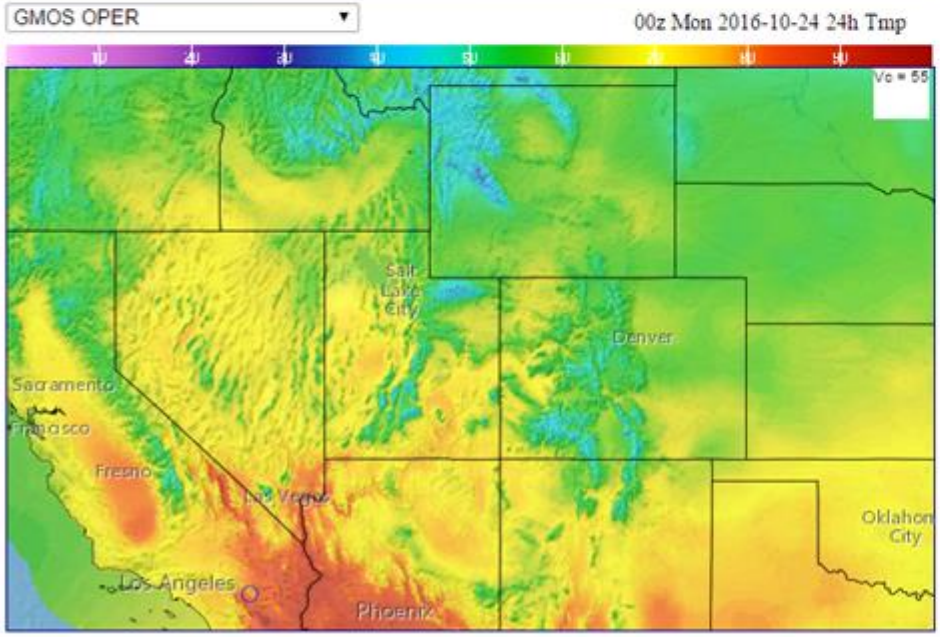
NBM V3.0 Zoom 1

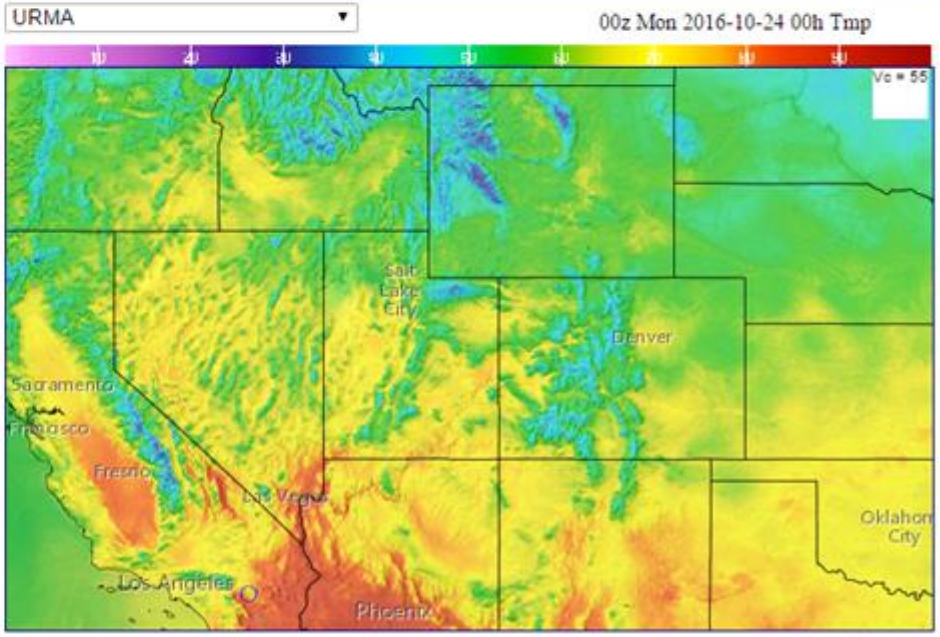


NBM V3.0 Zoom 2

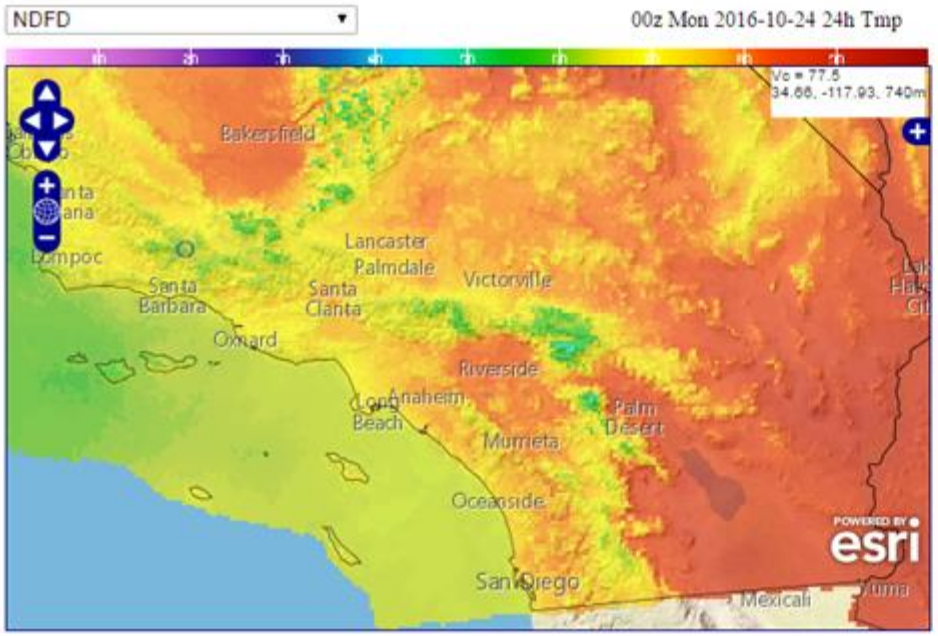


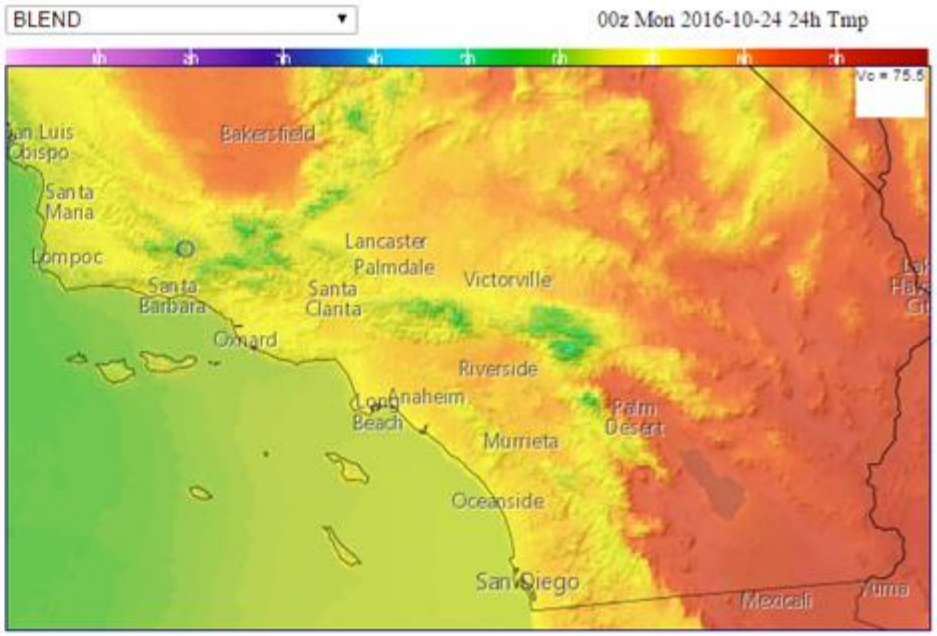


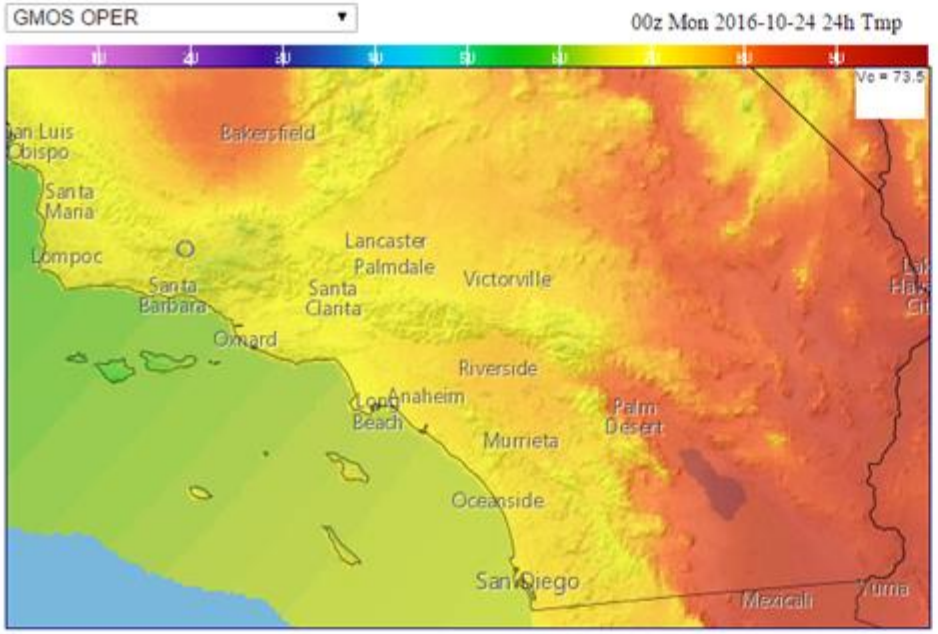


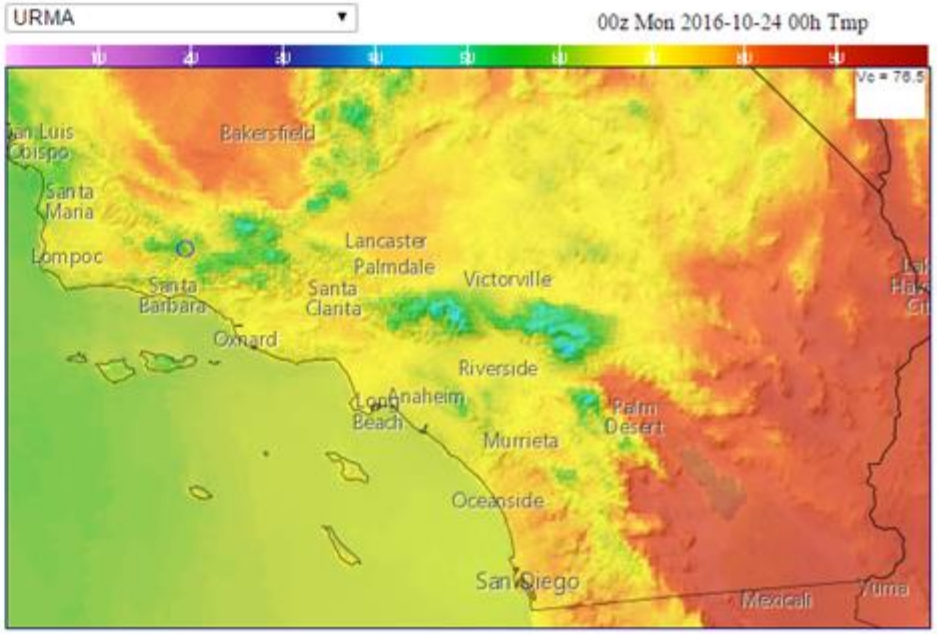


NBM V3.0 Zoom 3

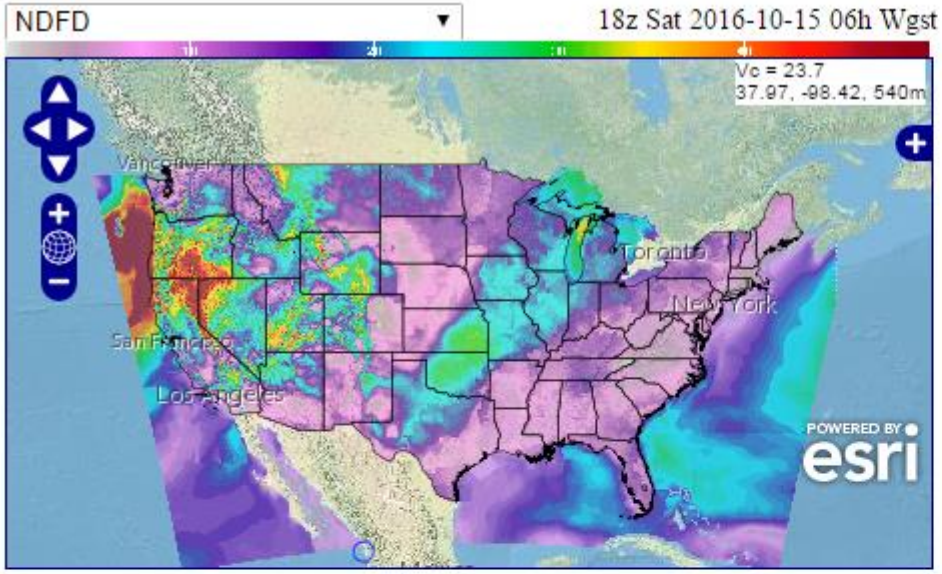


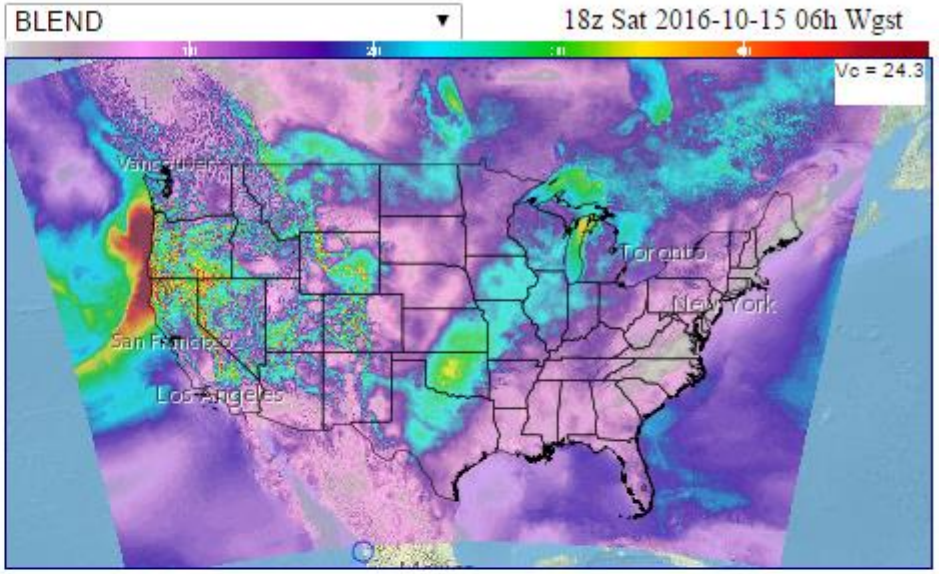


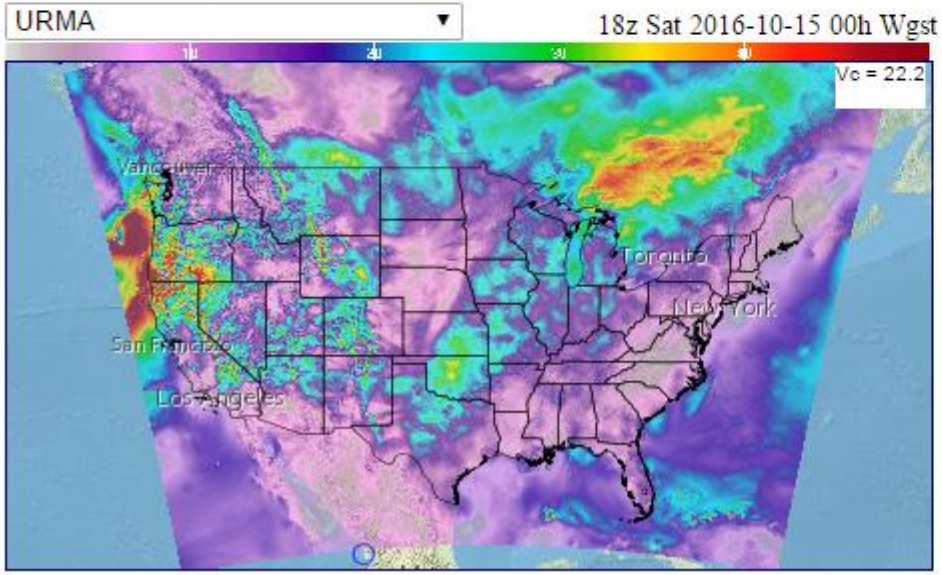


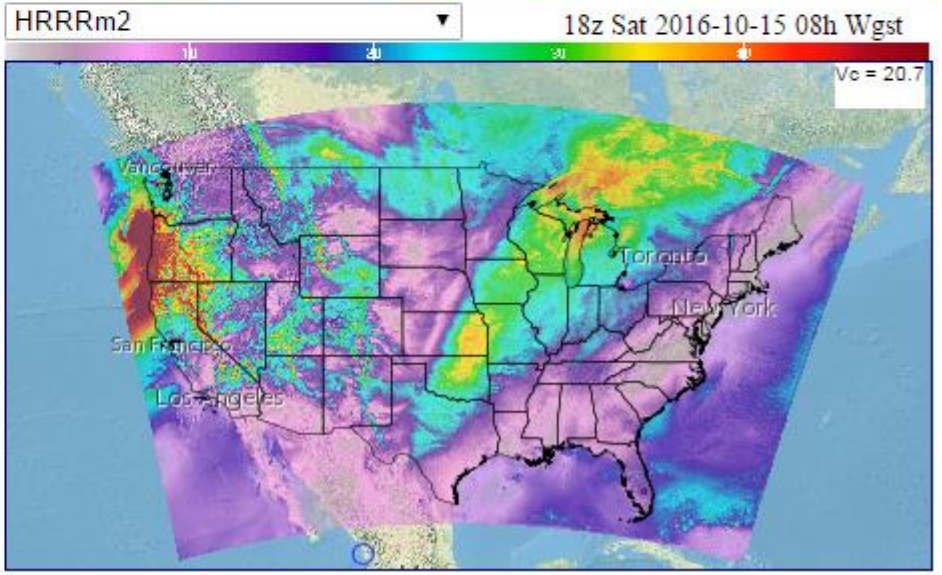


Wind Gust overview

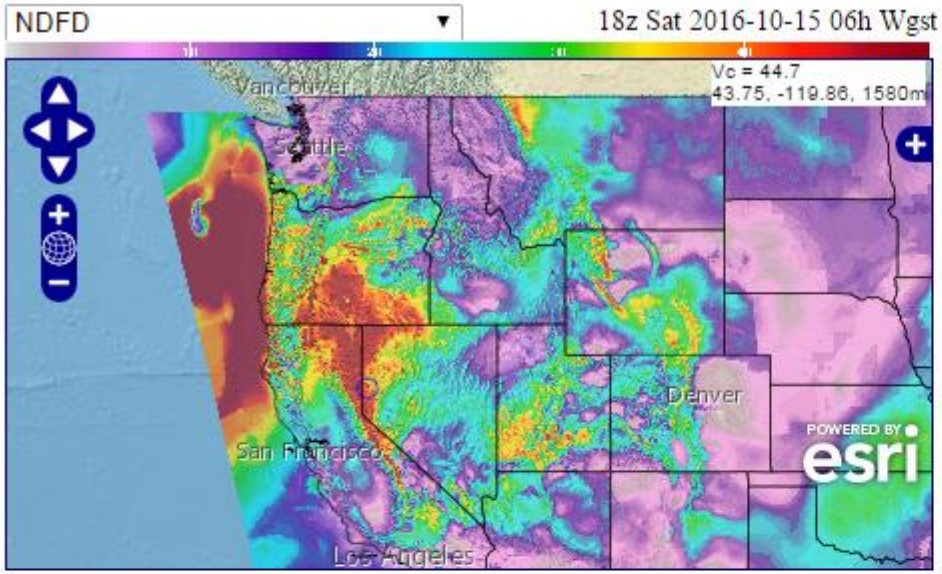


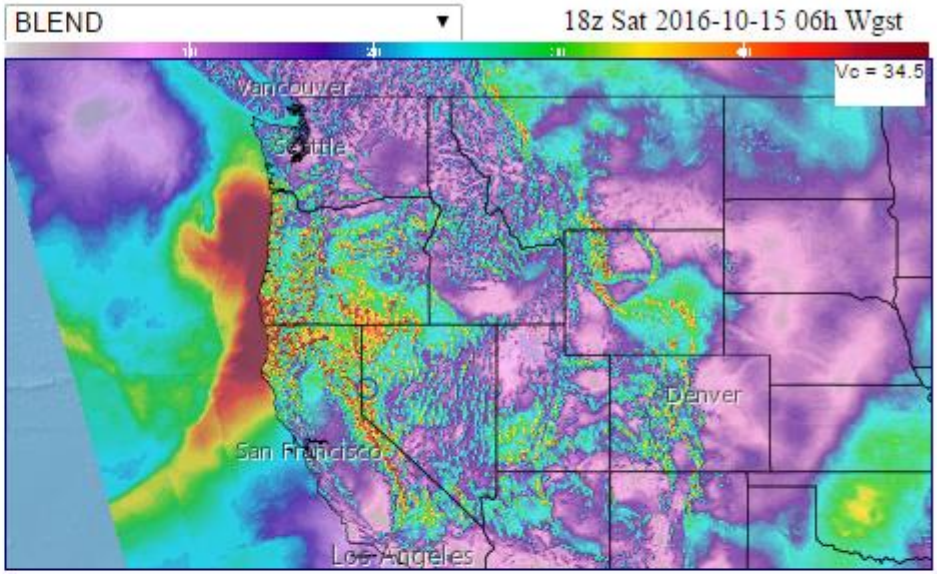


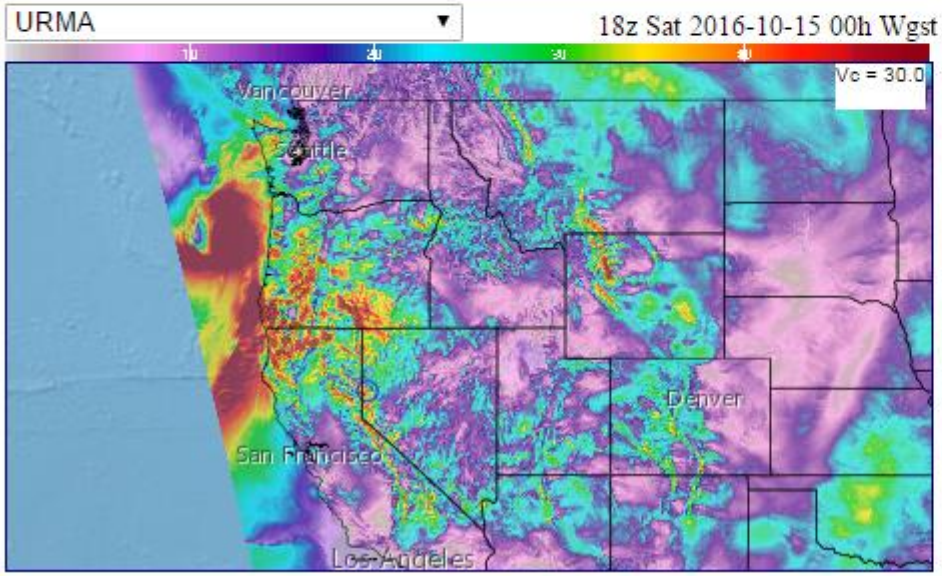


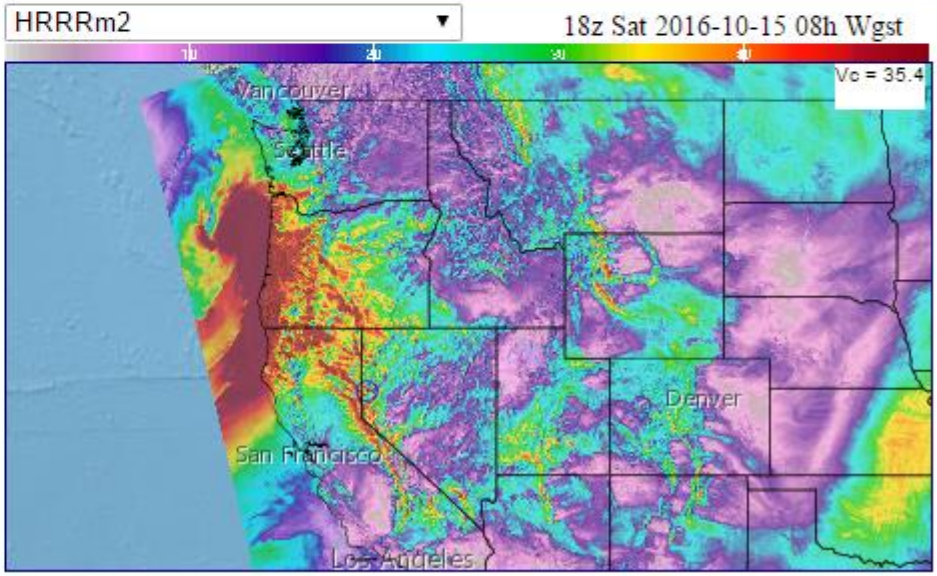


Wind Gust zoom 1

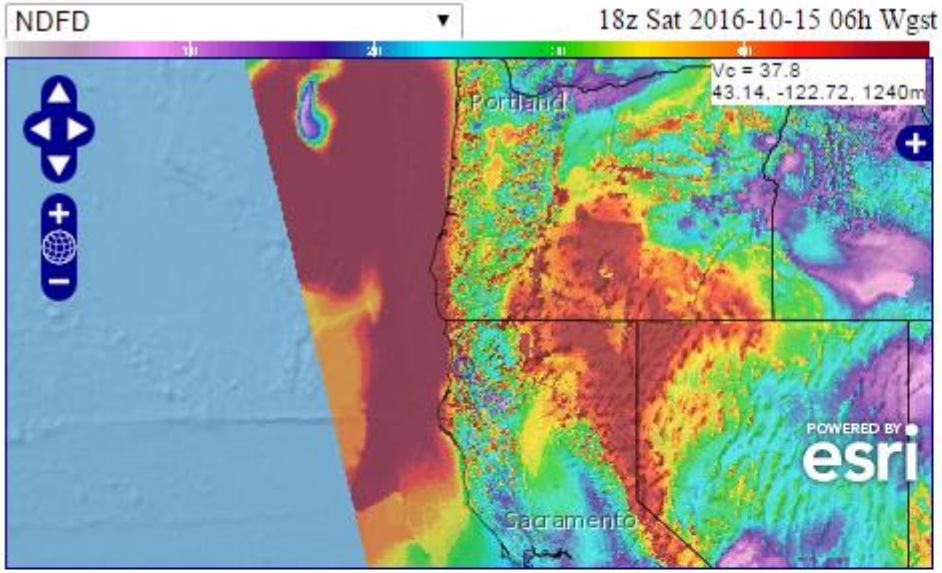


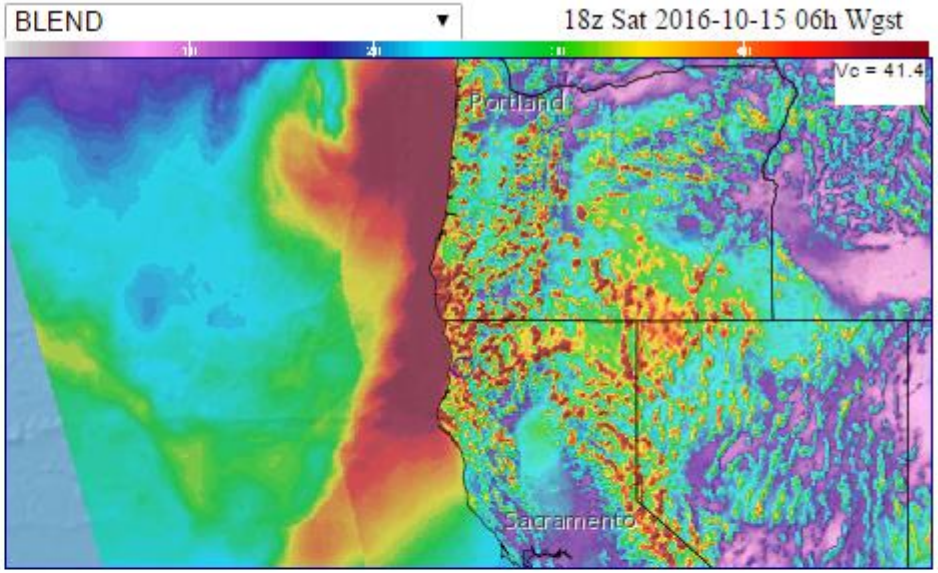


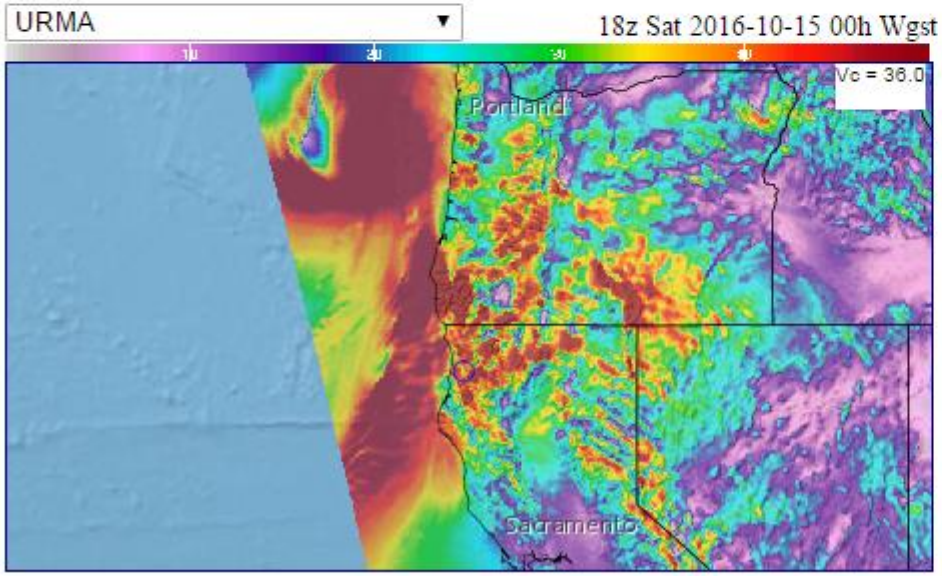


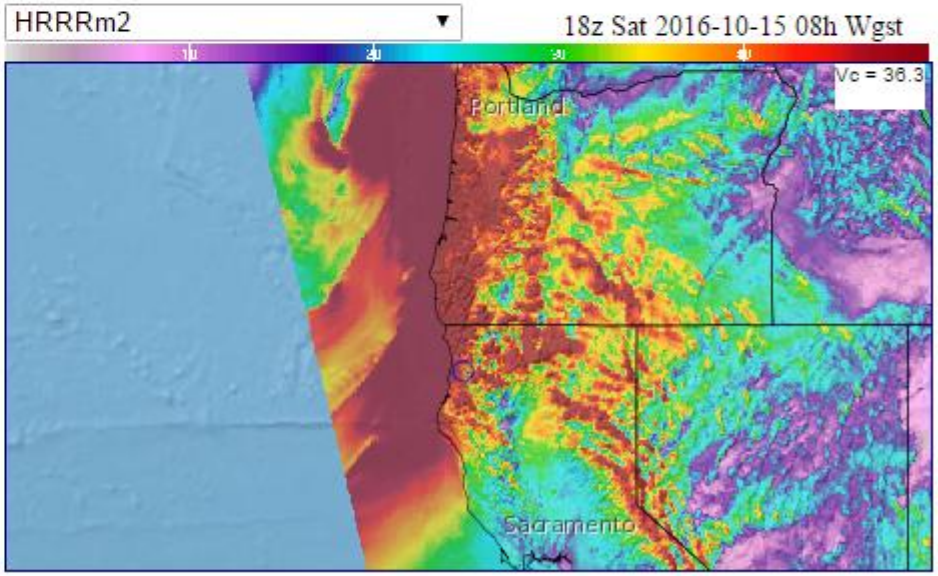


Wind Gust zoom 2

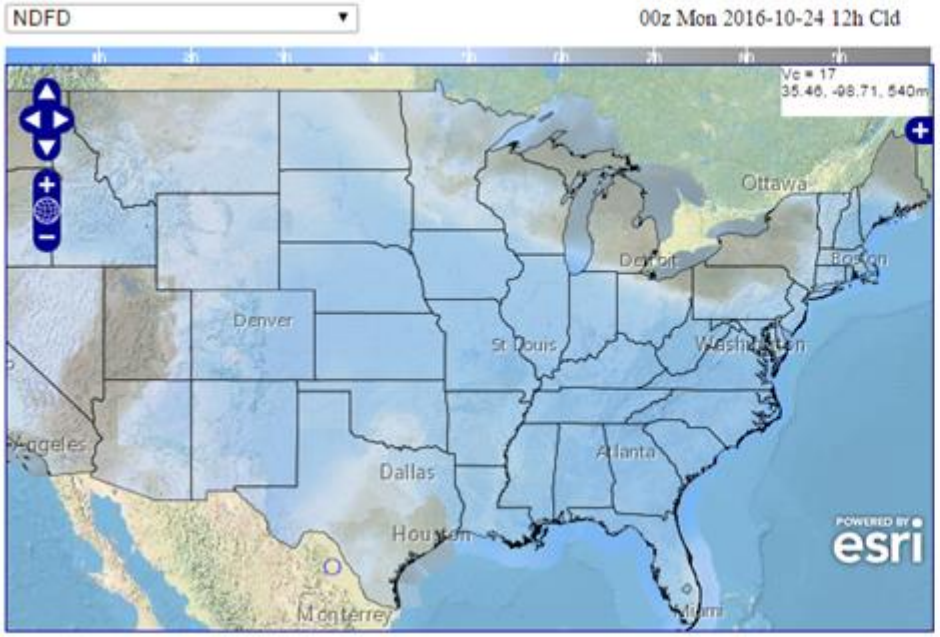


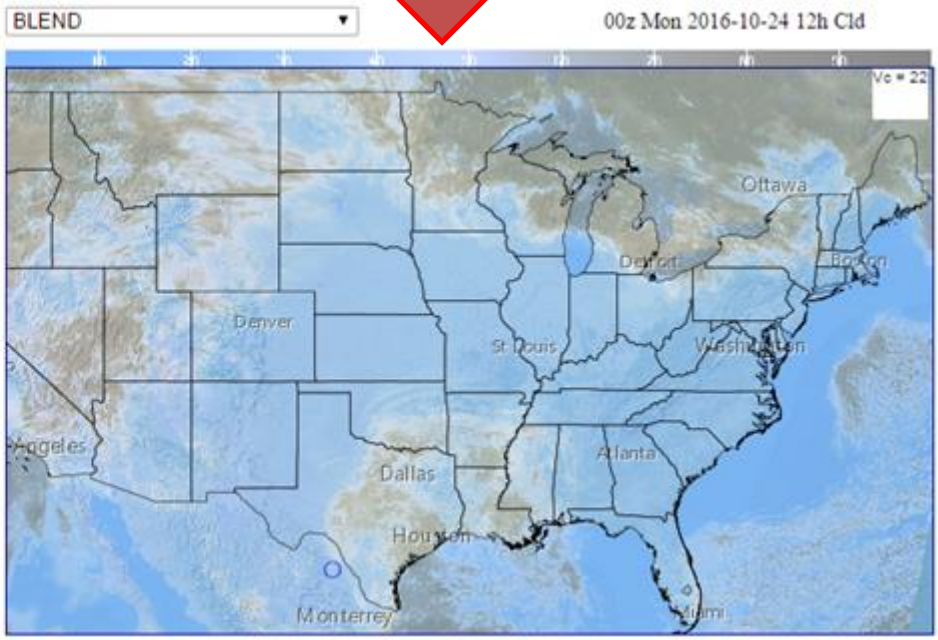


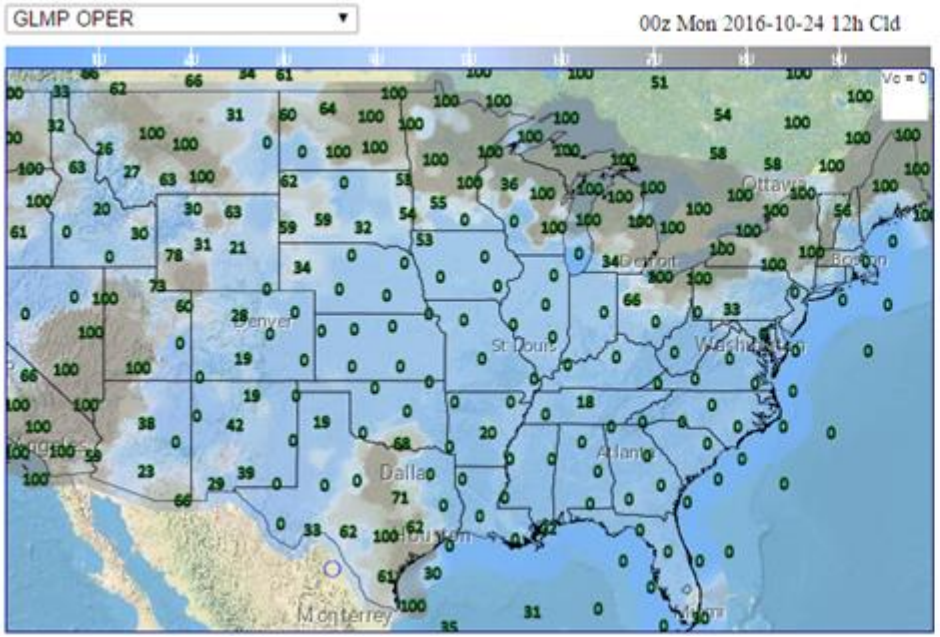


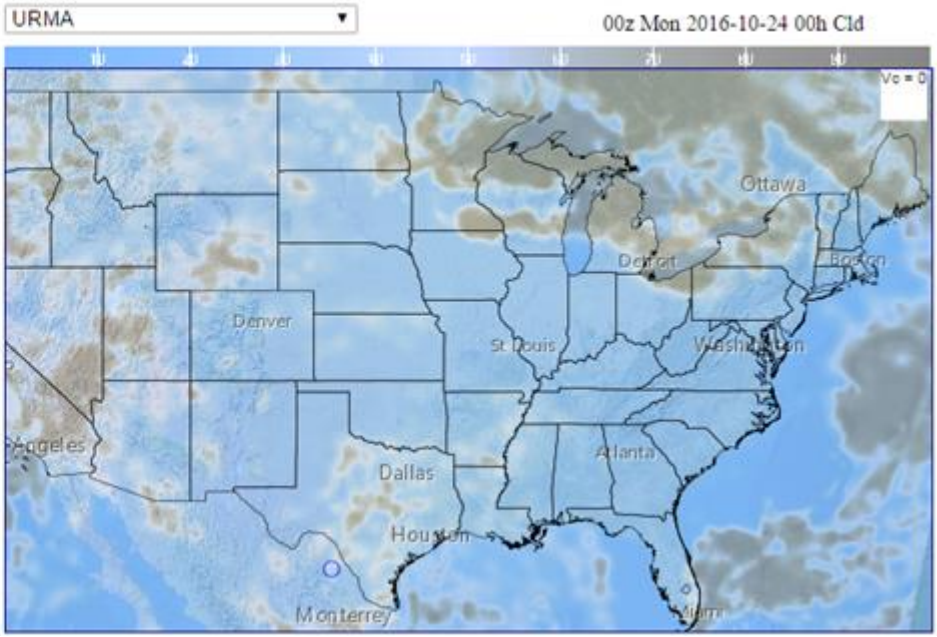


Sky overview

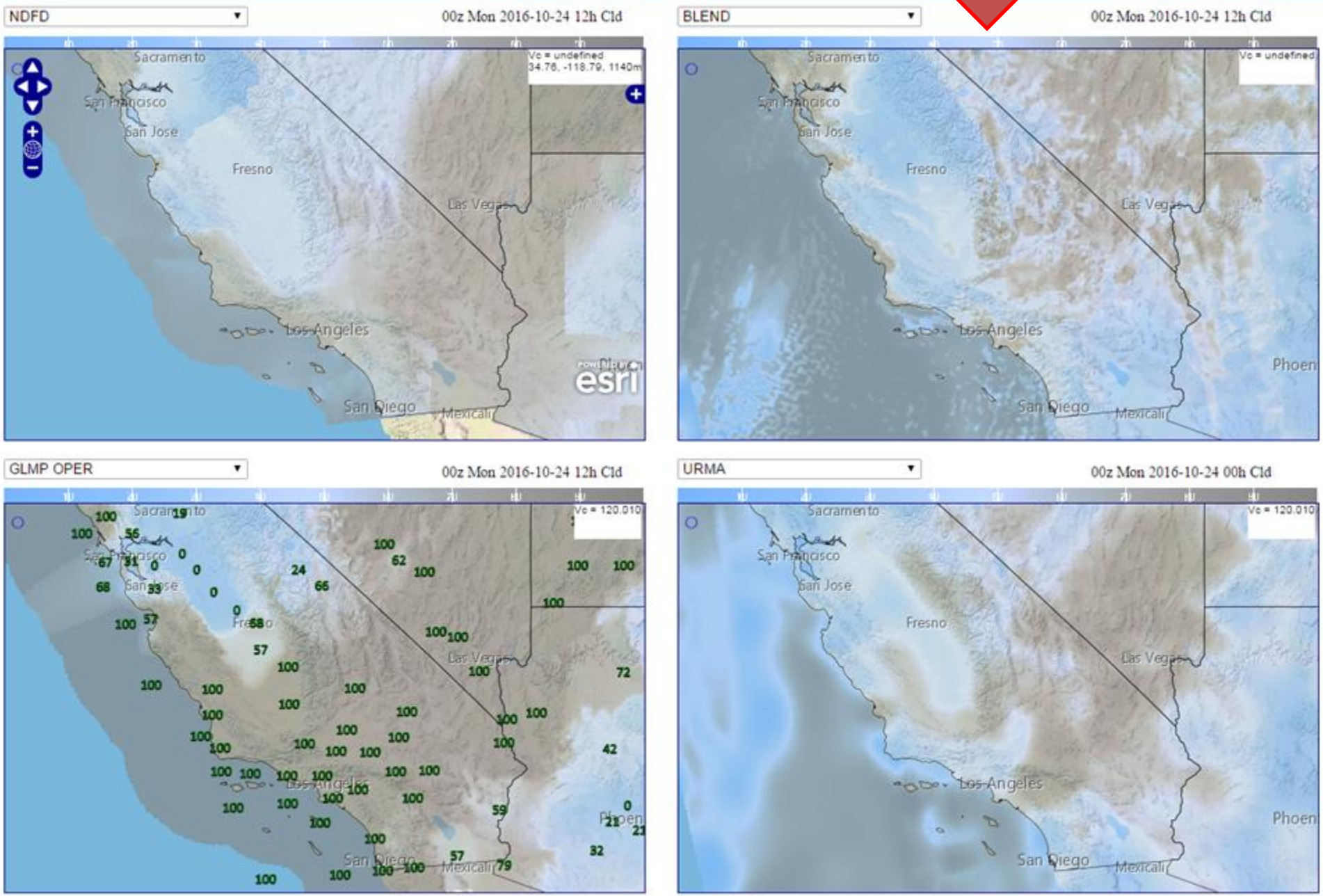








Sky Zoom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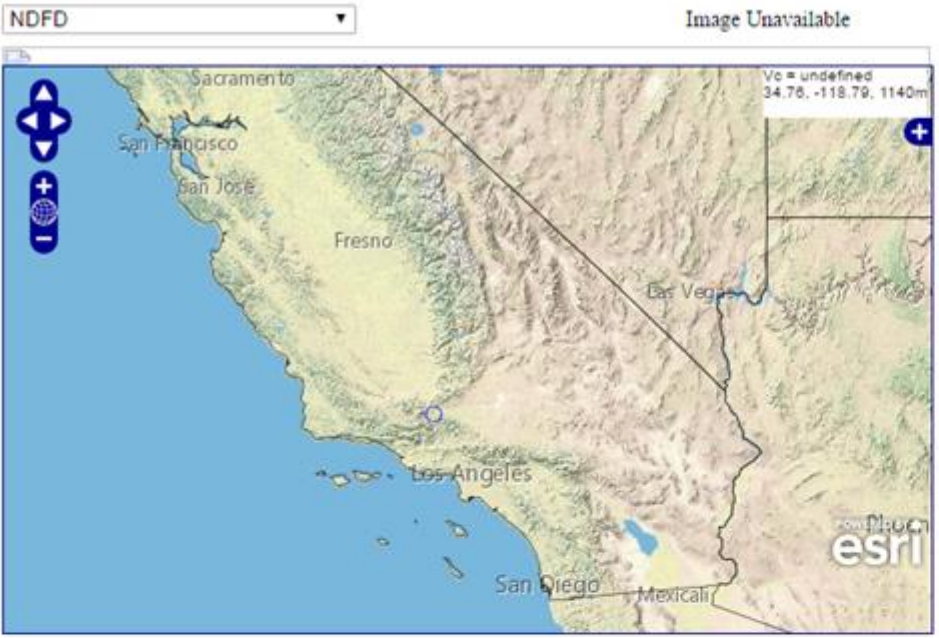
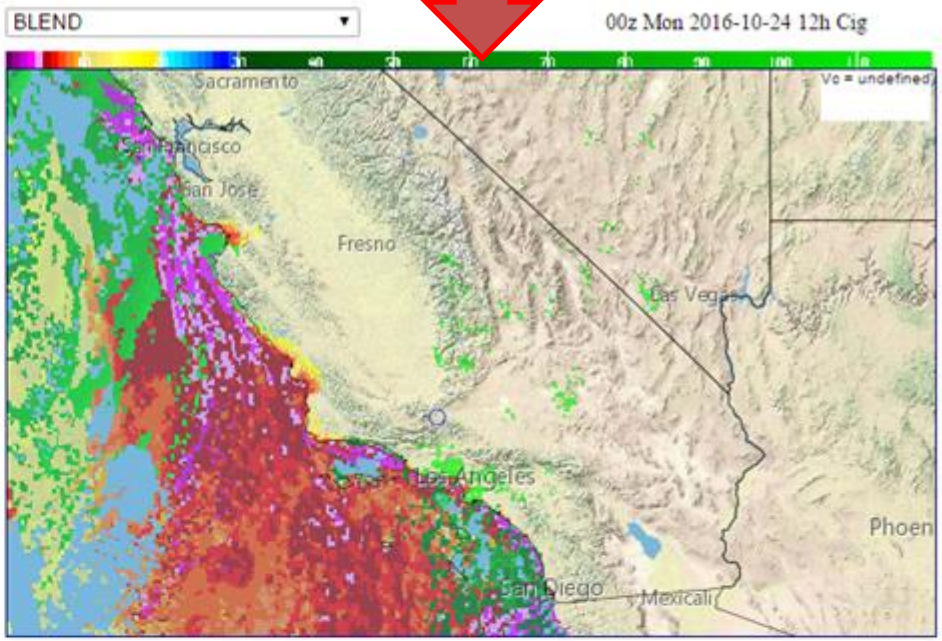
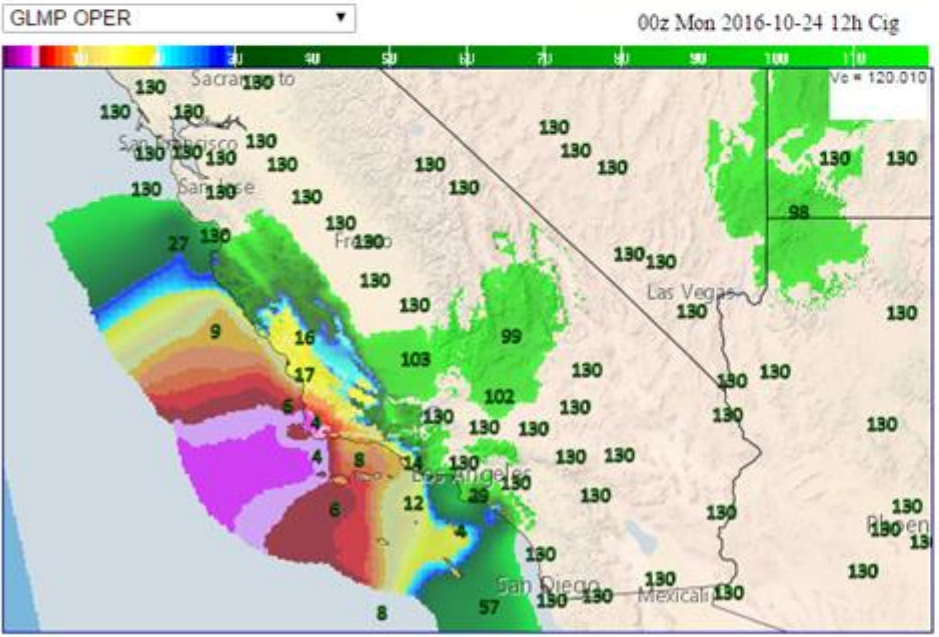
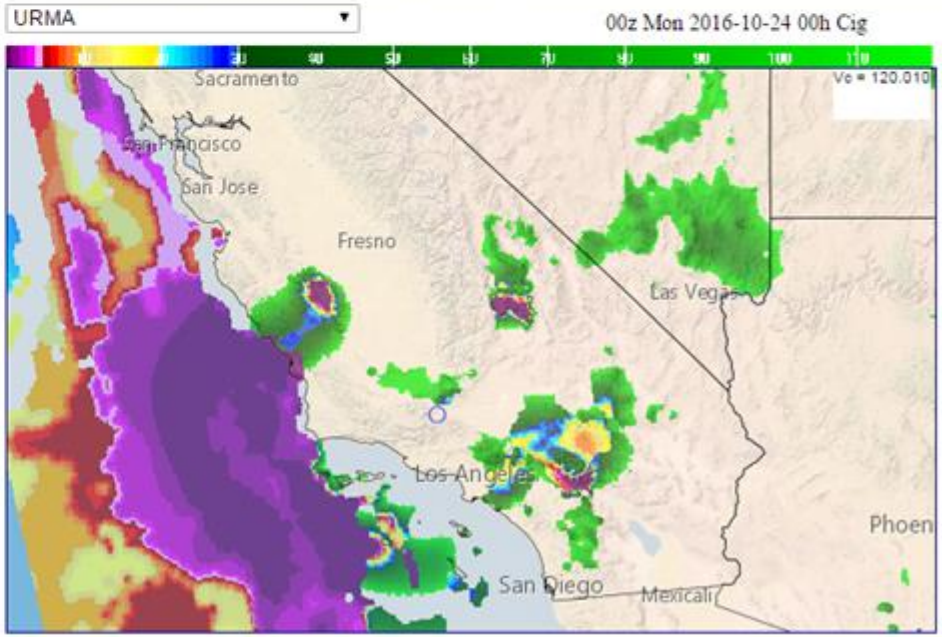
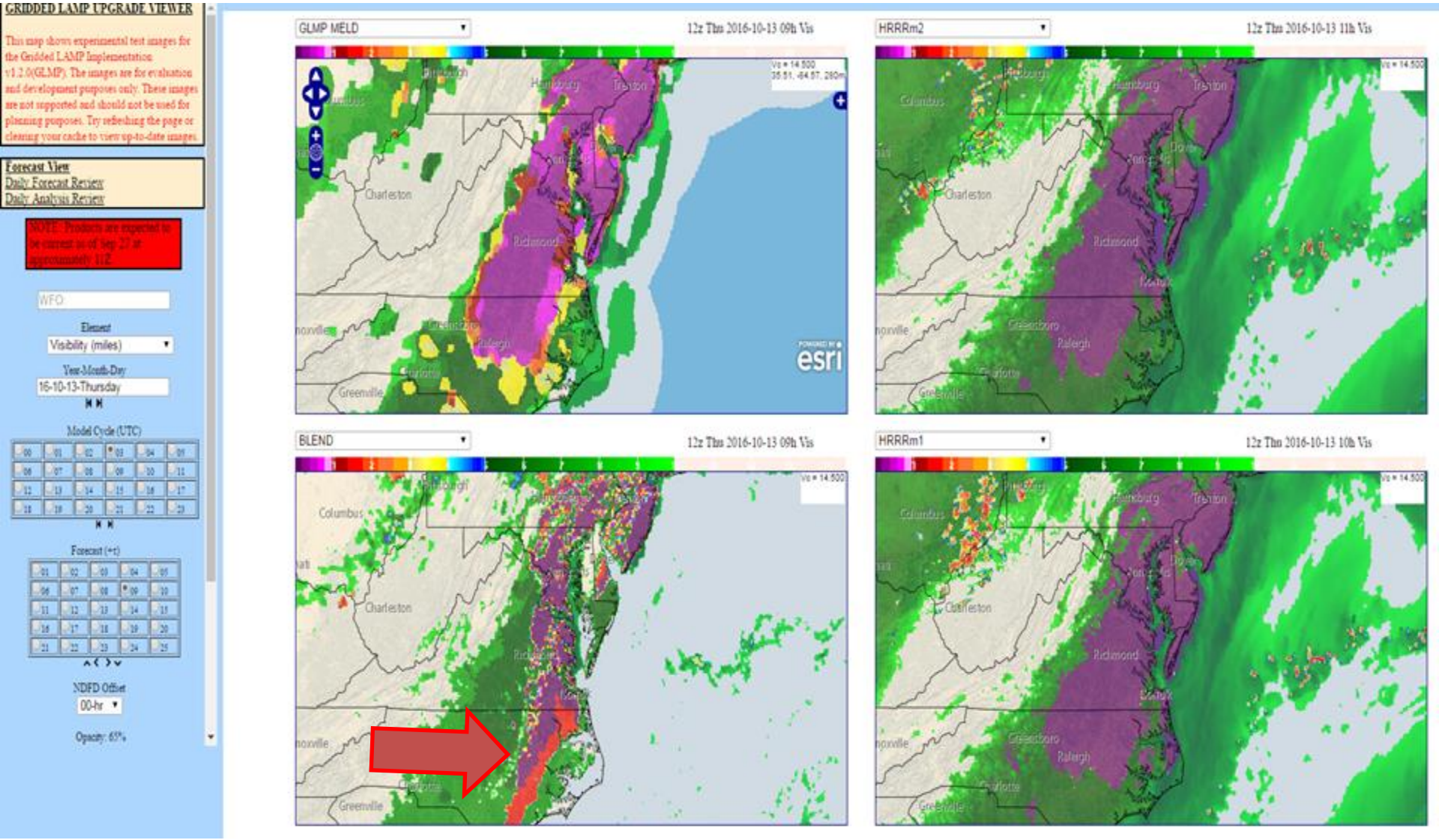




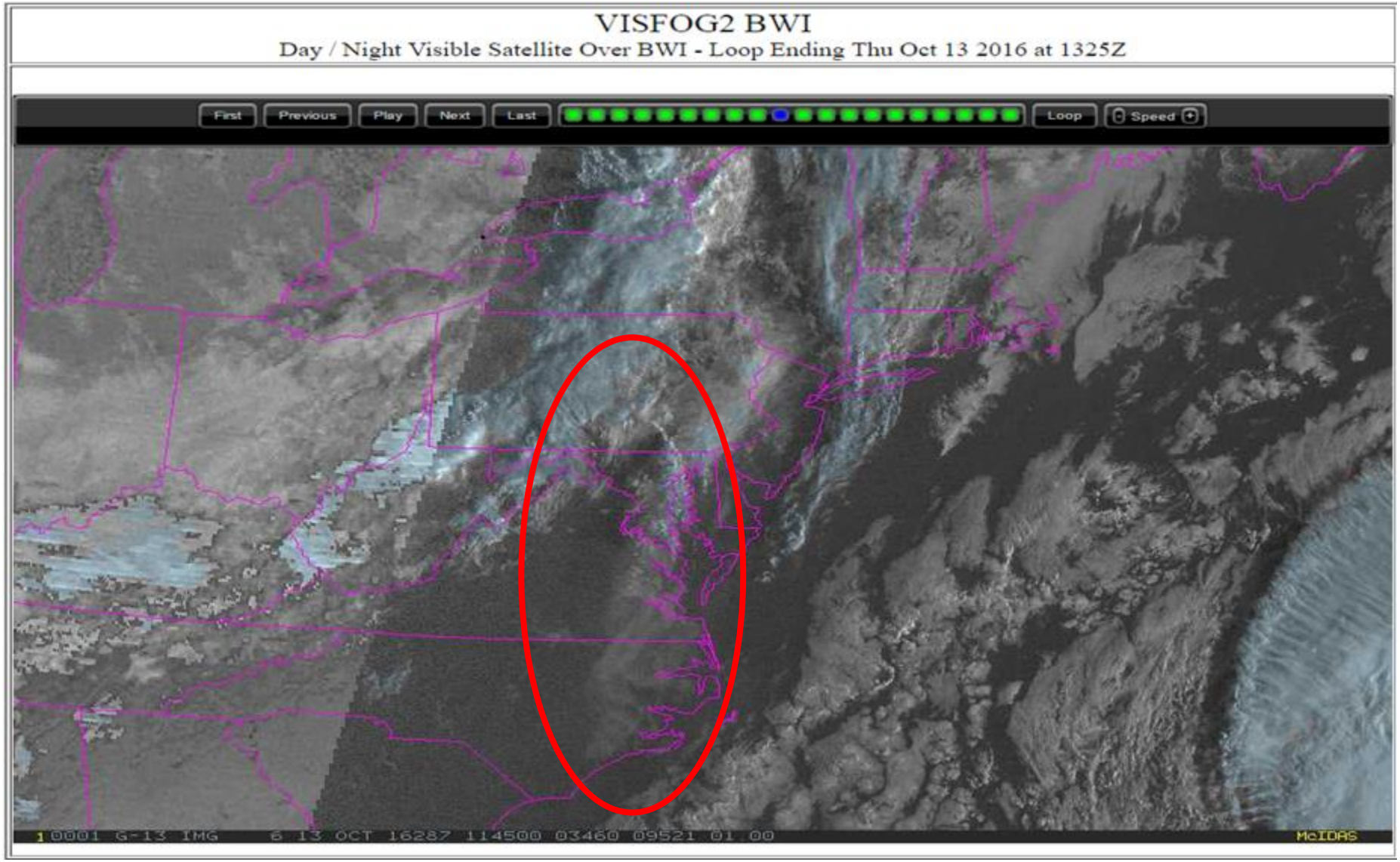




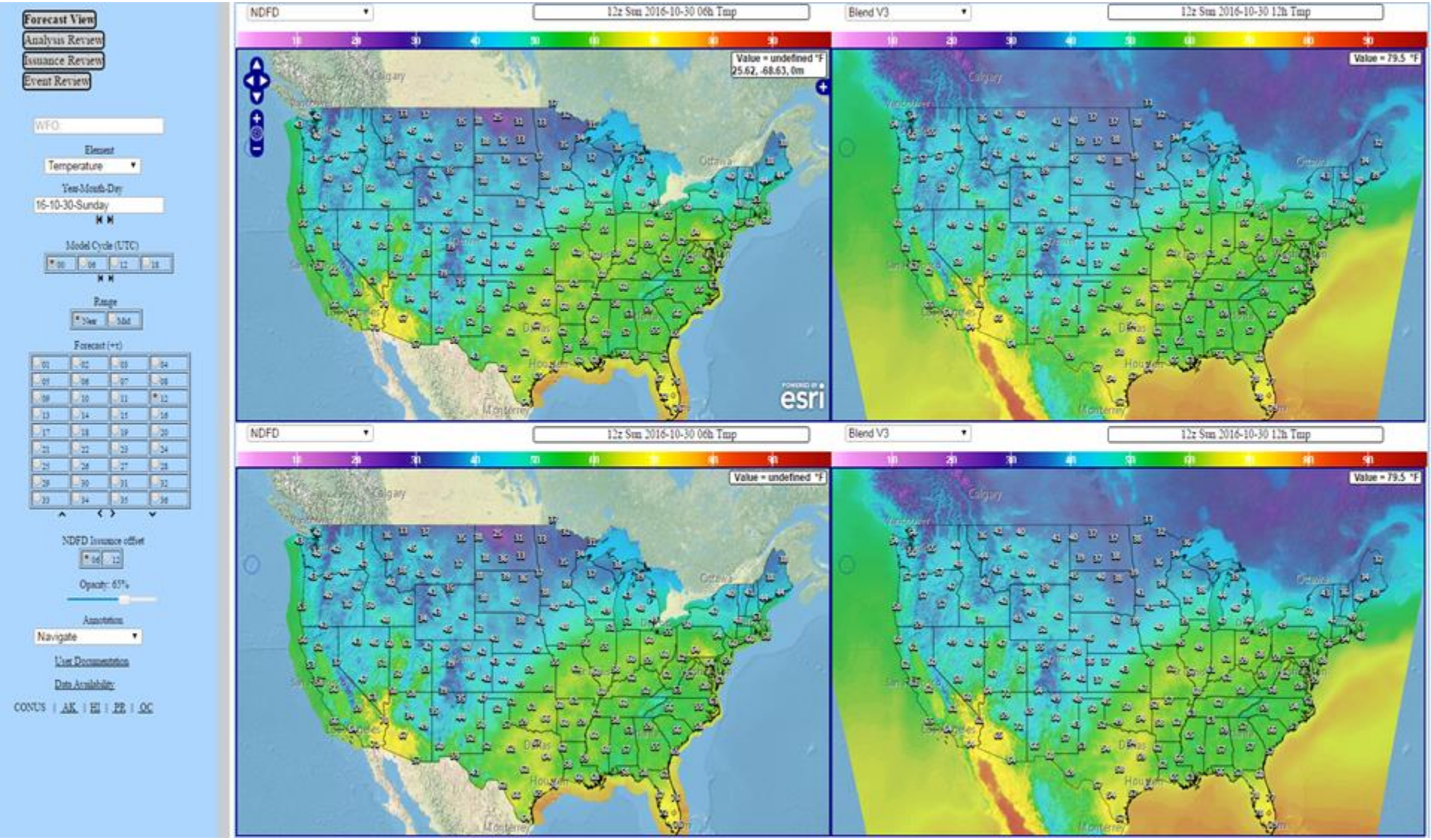
NBM V3.0 Visibility Case (04Z, 9-h Fcst)



NBM V3.0 Visibility Case (Verification)



NBM V3.0 Viewer (Under Construction)



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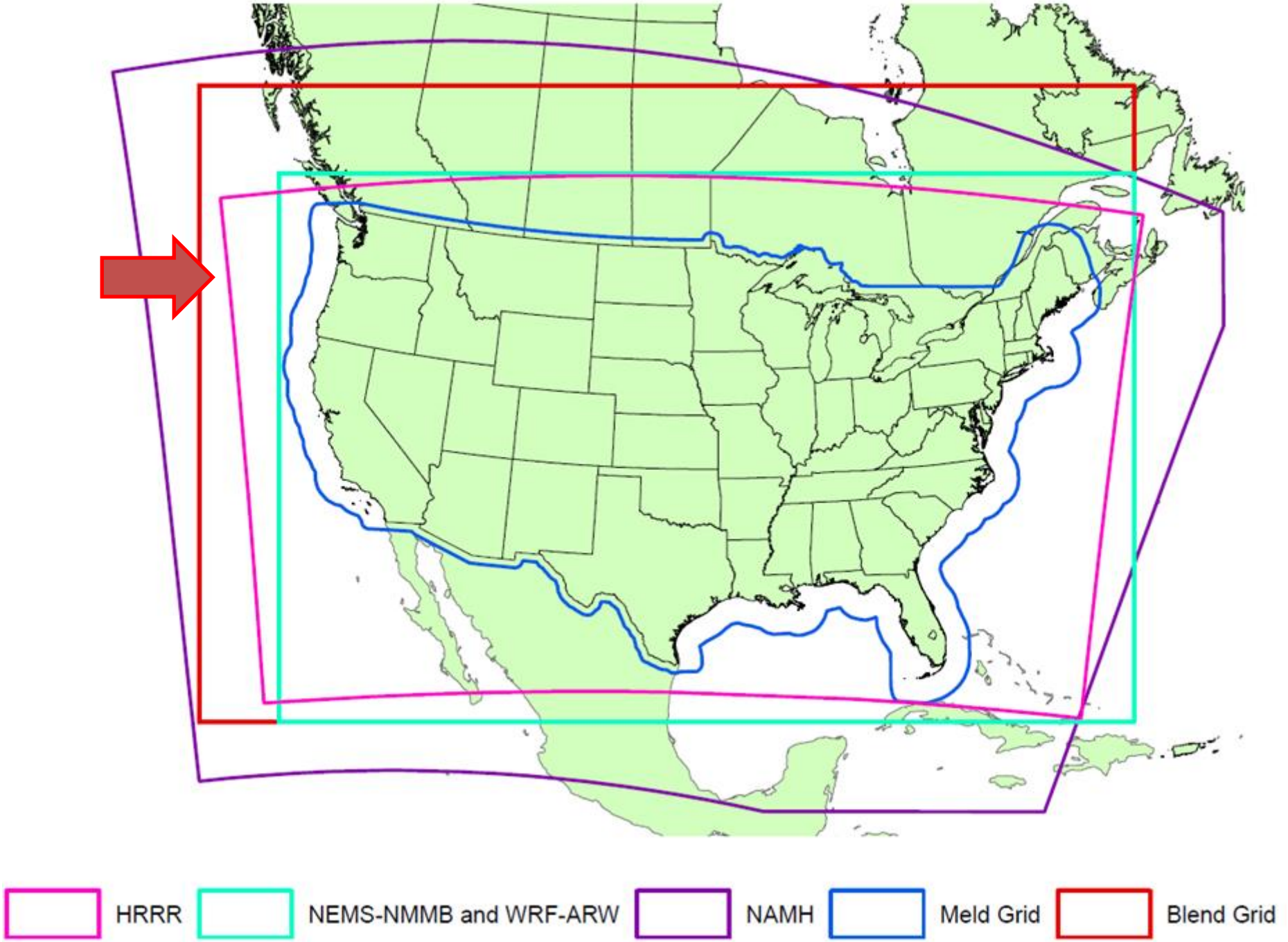
NBM Model Grids