From: Russ Schumacher <russ.schumacher@COLOSTATE.EDU>
Subject: Re: GFS versus ECMWF
Date: 27 January, 2015 at 16:55:48 GMT
To: <MAP@LISTSERV.ALBANY.EDU>
Reply-To: Russ Schumacher <russ.schumacher@COLOSTATE.EDU>

Brian and MAP,

I haven't been paying nearly as much attention to this storm as many of you, but I like looking at those WPC winter weather probabilities as well. For what it's worth, I grabbed a couple of those forecasts (WPC kindly provides the grids for download) and plotted the 10th and 90th percentile snowfall amounts (in inches); it seems that the forecast issued at 00Z/26 was the one most relevant in the decision-making time frame. In those forecasts, attached here, the 10-90 percentile range at NYC was 11.5-34", and the interquartile range was roughly 18-30" (so following Brian's discussion, that's a 25% chance of less than 18"), and of course NYC was right on the edge of where the snow amounts drop off considerably to the west. I'm sure there are plenty of arguments that could be had about the width of the distribution that should be used in public forecasts (25-75% vs. 10-90% or whatever), but I hope that products in this vein and the ones being generated by some of the WFOs become more widely accepted than a single map of predicted snow totals that are essentially guaranteed to be wrong.

Russ

On Jan 27, 2015, at 6:20 AM, Brian Colle <brian.colle@GMAIL.COM> wrote:

> Hi Tom,
>
> Some of us were following that winter webpage 2-3 days ago. What is odd, unless I imagined..., is that there were also a few % chance of exceedance plots on this same page later in the afternoon on the 25th when the official forecast came out of 24-36" inches across the NYC-LI region. What was interesting is that these plots showed a 60-70% chance for > 18" across the NYC-LI region. There was no > 24" threshold, but this implies that > 24" was perhaps around 50%?, yet the forecast snow maps showed 24-36". Unfortunately, I could no longer find these experimental exceedance plots as the storm was developing on the 26th, which is why I posed the question below. WPC has probabilistic snow amount plots online, but many users needing forecasts at the local level will not see it. Overall, I think these exceedance, min, max snow plots are very useful, so they should be highlighted just as much as the deterministic snowfall product online, so users can understand some of the uncertainty. This would have illustrated to the NYC folks that there was a 30-40% chance of not even reaching 18", which is more information than a map that just shows 24-36".
>
> Brian
>
> On Tue, Jan 27, 2015 at 7:22 AM, Tom Green - NOAA Federal <tom.green@noaa.gov>

wrote:

> Brian,
>
> Looks like the page isn't working quite as it's supposed to right now, but the D.C., Philadelphia, NYC, and Boston WFOs are working with experimental graphics this year. There should be a minimum possible (10th percentile), expected, and maximum possible (90th percentile) plot available from each office. Here's the NYC link (with only the expected graphic one screen down, unfortunately):
>
> http://www.weather.gov/okx/winter

Tom

On Mon, Jan 26, 2015 at 6:29 PM, Brian Colle <brian.colle@gmail.com> wrote:

Rich and Map:

Perhaps I missed from an earlier post... but are there probabilistic snow depth products on the NWS pages (not model, but a manual product) for people to see that cover these uncertainties? This attached snow depth map from NYC is very deterministic, but the amounts could be broken down into probabilities. Right now everyone from NYC to Long Island is expecting 2-3 feet of snow. May happen..., but really worry, especially towards NYC, since models suggest at least 50% chance they will not get 2 ft. This is not being communicated it seems...

QPF is important, but snow ratios over northern Long Island the last few hours have been more like 7:1 to 9:1, since cold-type habits and rimed needles are keeping the ratios down even though we are relatively cold compared to climo for these storms (sfc around 27F). I have seen numbers like 15:1 tossed around for Long Island for this event. Need some banding and more dendrites to get our ratios up too to help reach some of these forecast snow totals...

Brian

On Mon, Jan 26, 2015 at 5:55 PM, Richard Grumm - NOAA Federal <richard.grumm@noaa.gov> wrote:

> List

As the event gets closer and closer to game time on the NY metro area one has to ponder how to effectively use the NAM, GFS, SREF and HRRR

There are larger differences between HRRR evolutions and the 18Z NAM. The GFS and SREF seem to be more in line with the HRRR evolutions appear to show. Of course it appears the SREF and GFS are farther east than the NAM too.

The different model guidance is hard to use without some kind of means to see the PDF of all of these. The HRRR run after run keeps the higher QPF amounts well east of NJ/NYC.

I understand there is a bit of a dry bias in the HRRR. But how does one effectively deal with these issues? And if the HRRR continues to keep the band and higher QPF to the east; as it comes into the time scale of the entire event: how does one begin to modify forecasts?

There is this funny transition zone between when to you use various models playing out here.

Tried to send this earlier but it seemed to fail. At least I cannot see it. But the 18Z GFS came in in the interim.

Rich

On Mon, Jan 26, 2015 at 3:19 PM, Joseph Sienkiewicz - NOAA Federal <joseph.sienkiewicz@noaa.gov> wrote:

> As a follow up... attached is an image of the 1200 UTC GFS f030 forecast of EMSL (2 hPa spacing) with a bit more realistic central pressure 4 mb deeper than the ECMWF at that time step. Position is a little further E than EC and yes the storm is a little more progressive.

Perhaps there is a little something to output resolution.

Joe

On Mon, Jan 26, 2015 at 2:06 PM, Cliff Mass <cmass@uw.edu> wrote:

> There are major differences between the GFS and ECMWF for the big snowstorm. Using the WeatherUnderground website, attached is the 30 hr forecasts for both for the latest 12UTC run. ECMWF has a sub 964 HPa low off the Cape. WOW.
>
> And the gfs has sub 976 hPa low somewhat to the east. Is the WxUnderground showing the

full resolution GFS? Is there ANY way to view the full resolution GFS? The NAM is closer to the ECMWF.

Will this be another Sandy where the ECMWF gets the laurels? One thing is different...this ain't about resolution of the deterministic forecasts...it is about data assimilation....cliff