GAZPACHO (Gridded Automated Zonal Precipitation And Complete Hi-res Output)

What is GAZPACHO?

GAZPACHO is an automated program that was created to assist WFOs with snowfall verification (rainfall has subsequently been included). GAZPACHO is run on a PC (with ArcGIS 10.5 installed) via a simple GUI or command line. Within a few minutes, GAZPACHO creates maps of observed precipitation (rain, snow or both), zone-average rain/snow, NDFD forecast rain/snow (from NOMADS), difference (or error) maps of forecast minus observed rain/snow (inches and percentage), and a spreadsheet table of zone average statistics. Example of a few output maps and spreadsheet table from a heavy snowfall event:

![Example output maps and spreadsheet table](image)

What programs does GAZPACHO use?

GAZPACHO uses ArcGIS software and Python scripts to create the maps. GAZPACHO can be run through a GUI or command line. The GAZPACHO package can be downloaded and installed on any WFO PC that has ArcGIS software on it. A complete set of Installation/User instructions are included with the download package.

What input data sources are required for GAZPACHO?

There are three input options in GAZPACHO. The first is a QC’d list of snowfall or rainfall reports from the home WFO (preferably with a few from surrounding WFOs too) via a PNS with metadata, issued via ECLAIRS or IRIS. The second option utilizes NOHRSC snowfall or AHPS rainfall analyses as the input source. A blend of NOHRSC/AHPS and PNS data is the third input option. The beginning and ending time of the precipitation event is also needed to compute difference maps.

What was the motivation for creating GAZPACHO?

The need for a quick, easy, automated and standardized WFO snowfall (or rainfall) verification system that utilizes ArcGIS software and Python scripts for spatial analysis of precipitation.