Calibration, Reliability, and Sharpness

Quick Reference Guide

Calibration attempts to improve an ensemble forecast by correcting systematic biases and deficiencies in ensemble dispersion.

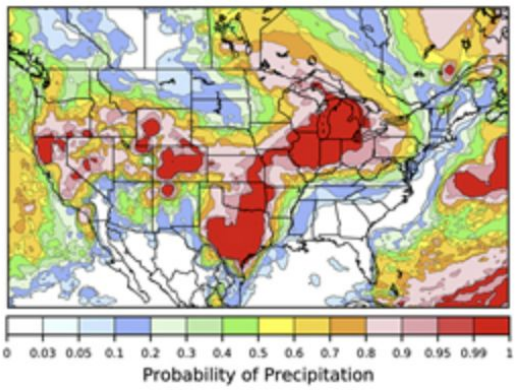
A well-calibrated forecast system has high **reliability** without sacrificing too much **sharpness**.

Reliability is the degree of agreement between the forecasts and observations over many cycles.

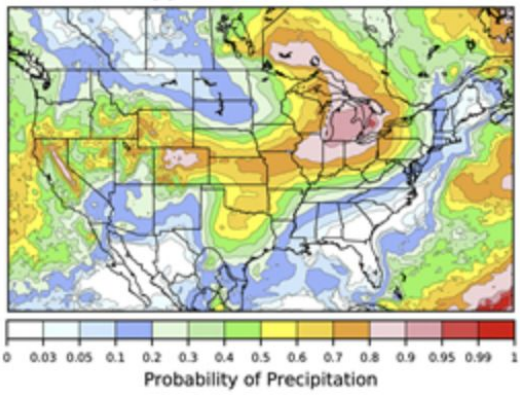
Sharpness is a measure of how close the forecasts are to 0% or 100%.

Example: *Forecasting the climatological probability of rain in New Orleans every day would have high reliability over time, but poor sharpness.*

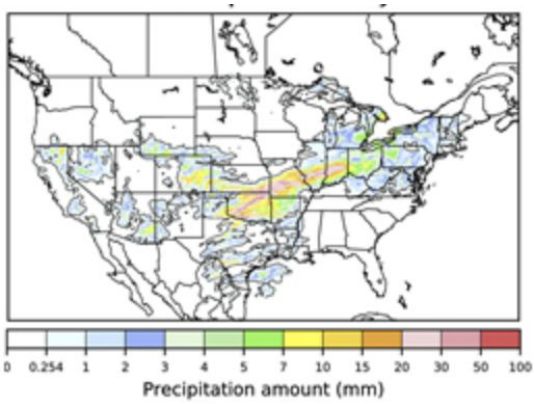
Raw Output



Calibrated Output



Verification



Human forecasts, raw model data, or ensemble output can be calibrated to account for systematic biases as determined by long-term verification studies, yielding improved forecasts over raw output, like in the above example.

Make sure you know how long the calibration basis period is. A few months? A few years? More than one full season?