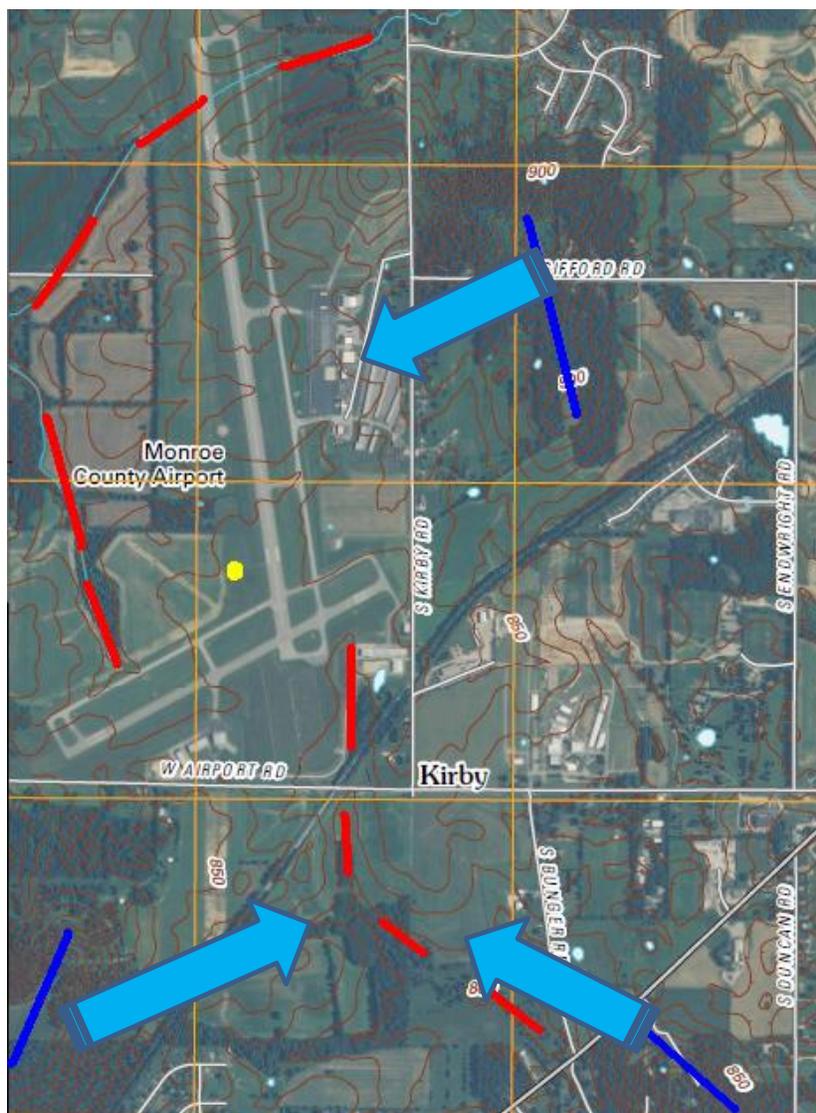


AWOC Winter IC 4.3 Microclimate Exercise  
(Example originally highlighted in Aviation Post-Mortem by Forecaster Chad Swain)

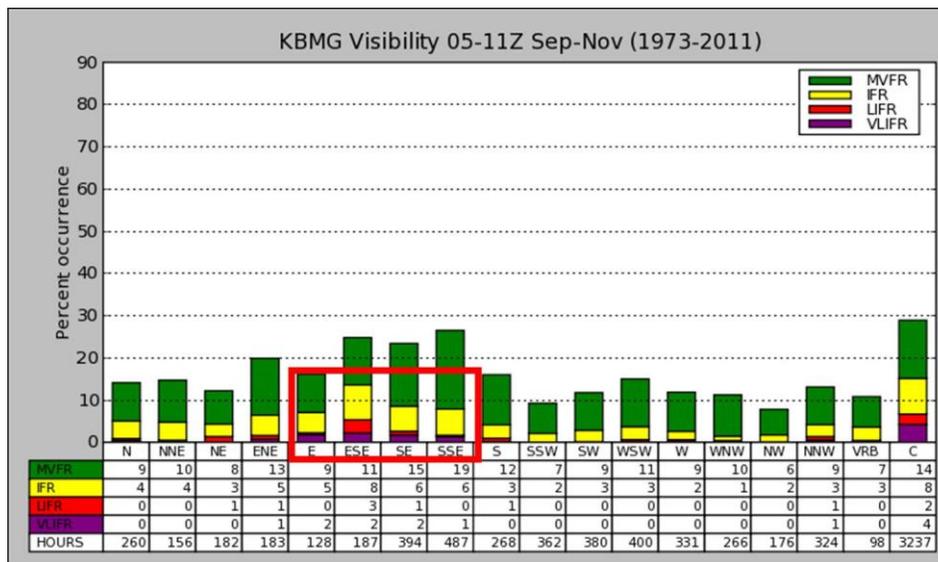
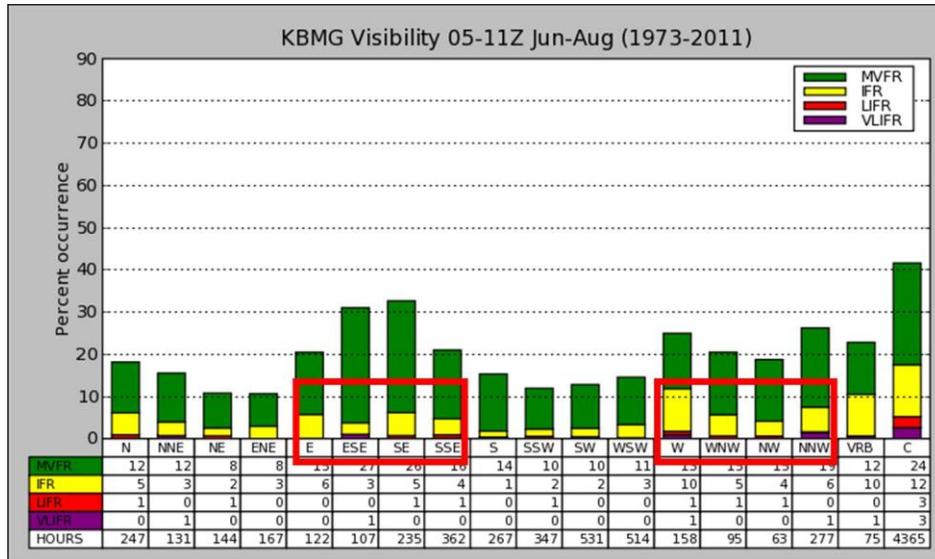
Although the overall climatology of central Indiana does not typically vary much across the area, there are some areas where microclimates exist. These small scale patterns pose a concern for both public and aviation forecasting, therefore, it is imperative that microclimates be recognized. An example of a microclimate in central Indiana is the unique susceptibility for fog development under particular conditions at the ASOS site in Bloomington, Indiana (BMG).

The image below is a satellite view of the BMG site (yellow dot) with elevation contours overlain. Upon this examination of the local topography, it can be determined that local ridges (blue lines) slope downward toward local valleys situated nearby the ASOS site.



With such topography, one could expect pooling of cool air near BMG during favorable radiative cooling conditions including clear skies and light to calm winds, presenting a microclimate for

fog development. The following graphs show the percentage of time visibilities are reduced to flight categories below VFR criteria at BMG, as distributed by wind direction. The first graph is from June to August, and the second is from September to November.



The open red rectangles highlight wind directions associated with frequent sub-VFR flight categories. During the summer months, winds of the west and northwest are associated with reduced visibilities at BMG as are easterly to southeasterly winds. The autumn months also show relatively frequent low visibilities with easterly to southeasterly winds. Upon comparison to the local topography, these wind directions blow from relatively low elevations toward the ASOS site. This would suggest ground fog often advects into the ASOS location rather than form there. It is important for forecasters, specifically aviation forecasters, to be aware of this microclimate and keen in on the favorable conditions for reduced visibility at BMG.