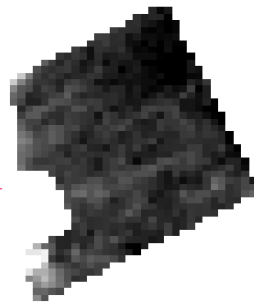
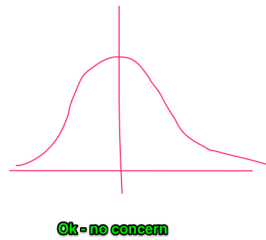


## FarmHack Concept - Ranked Lists of Fields showing performance deviations in the Histogram

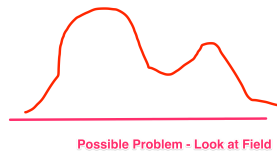
The idea of this data interaction is to make a tool that can identify, in graph form, any potential deviation in field performance or between fields, that might reveal a growing or emerging problem. The concept revolves around the fact that the dataset in the current visual form may hide emerging problems if the problem is evenly distributed throughout the image. By taking the histogram of a field it is hoped to reveal additional peaks emerging that would cause the farmer to look at the data/field in more detail. The final output should look something like this:

Field A

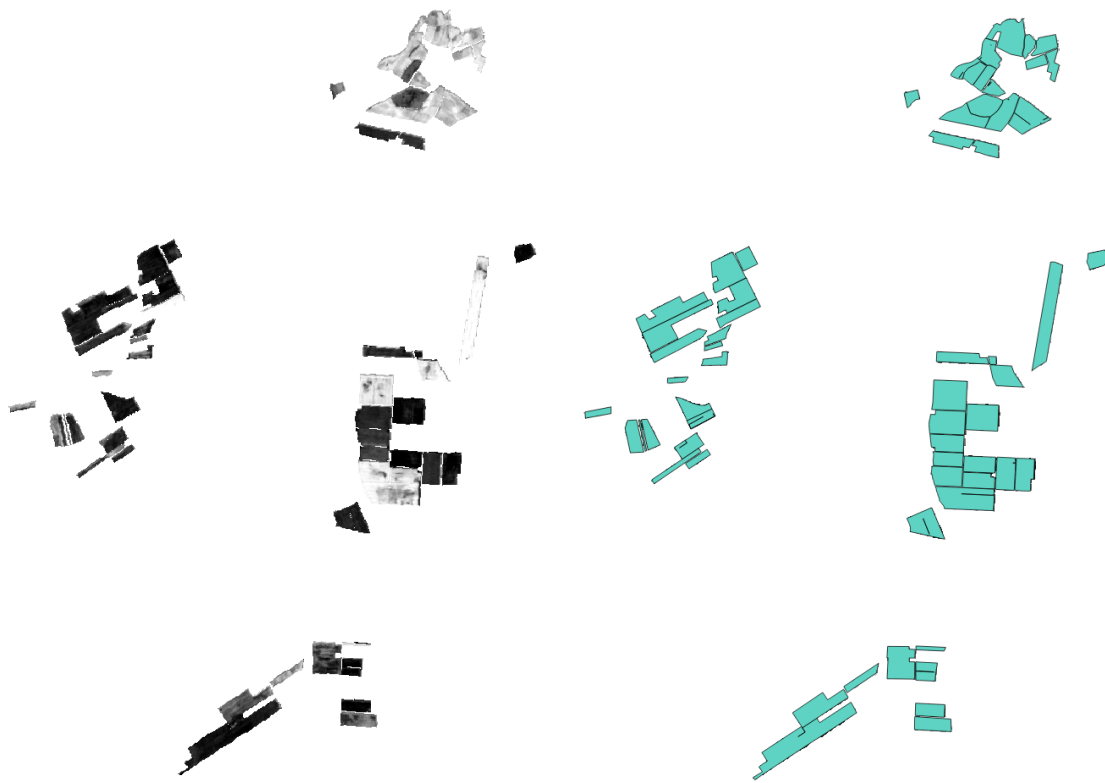
Avg = 0.8  
Std Dev = 0.4



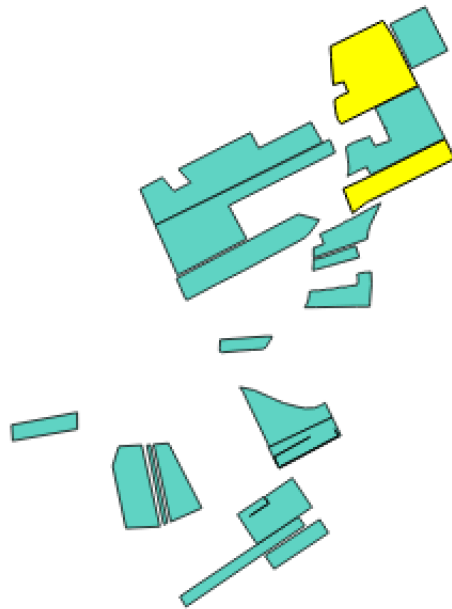
Field B  
Avg = 0.8  
Std Dev = 0.2



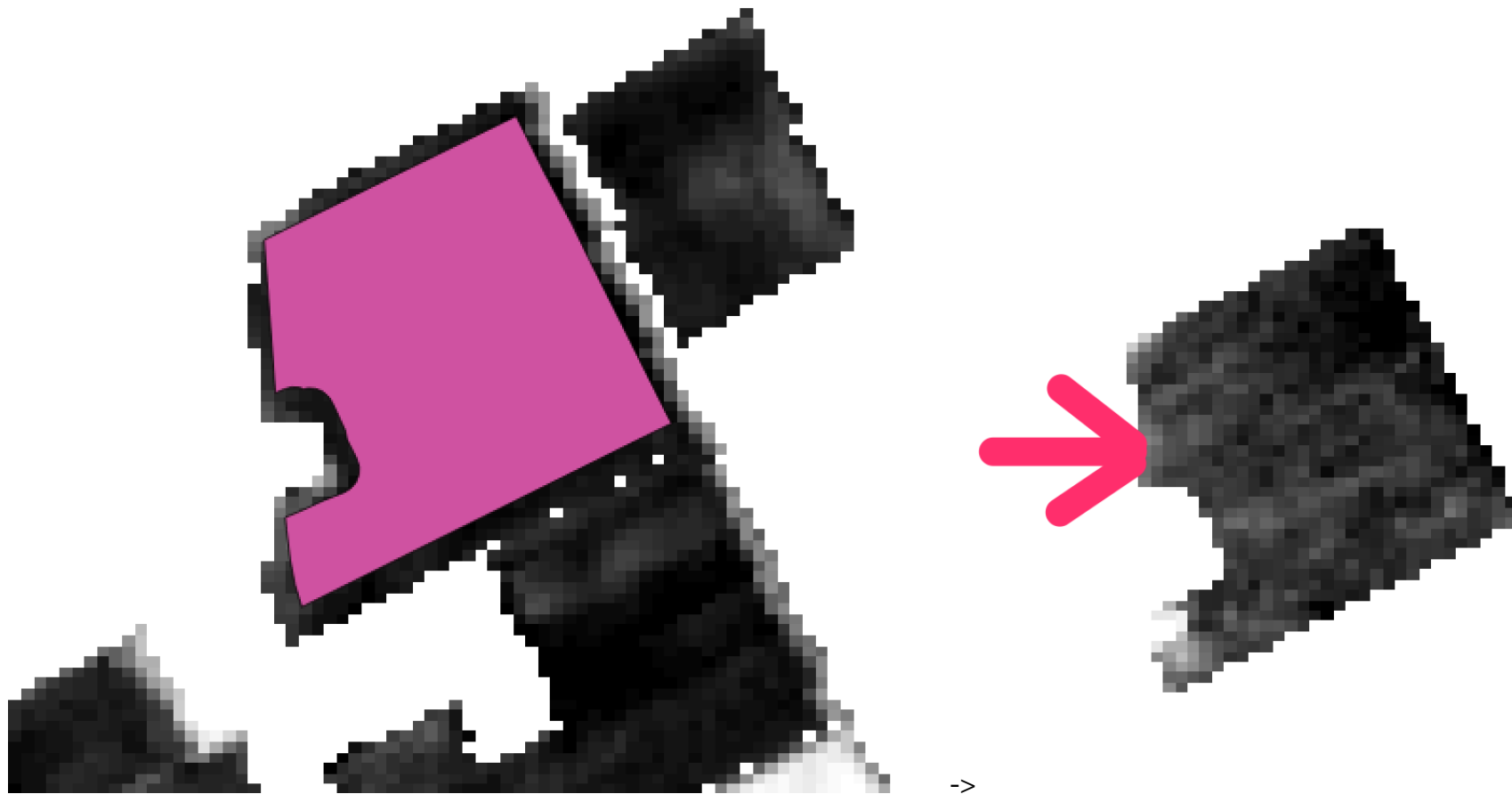
Take the dataset



The farmer can select the fields to consider or to rank



These are masked, breaking it down into individual field, removing the pixel bordering effect



convert to a histogram, with the intent of looking for significant deviations in the form of dual peaks

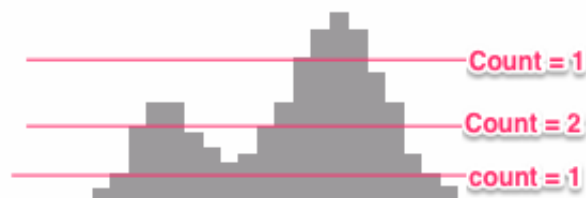


**Normal distribution**



**Bimodal (double-peaked) distribution**

Set a threshold point at which to calculate the number of peaks, possibly by scanning the image from bottom to top, looking for gaps



**Bimodal (double-peaked) distribution**

If a count=2 scenario is encountered, then there is the potential that a problem is developing. This may only be able to look at visually.

A time based evaluation of this would also be quite valuable, as it may show an emerging area problem.

For example, if the problem is evenly distributed, it is hard to see in the picture visually, but would be very apparent in the histogram representation.

Things that need to be done/considered - Exporting the raster data measurements into a stats program or algorithm that computes a minimum threshold count for the histogram to give a good distribution