



## Evaluation of Satellite-Based and Reanalysis Precipitation

### Abbreviation

Hello, my name is Enkhpurev. Hydrology student of the National University of Mongolia. Research is about the Evaluation of Satellite-Based and Reanalysis Precipitation of Bayankhongor.

Bayankhongor is a large part of the Mongolian Gobi steppe.

This research measures the amount of Bayankhongor's precipitation during the random week in June. Then compare station and satellite denotations. As a result, I prove that: Which one is more real?

Why do they indicate different denotations?

### 1. Station denotations

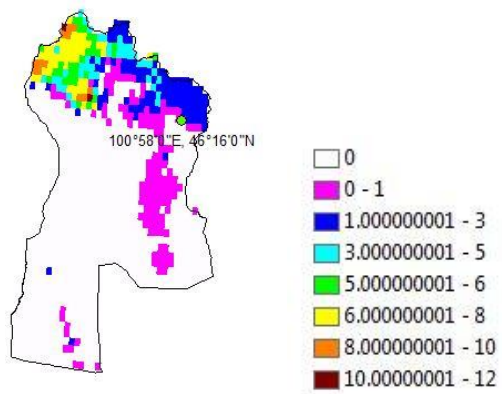
Mongolian Meteorological and Environmental Research Agency						
Archive and database department						
Station name	Year	Month	Day	Average air temperature, Celsius	Average air velocity, m/s	Total daily precipitation, millimeter
Bayankhongor	2019	6	18	19.8	3.6	2.2
Bayankhongor	2019	6	19	18.9	4.1	7.6
Bayankhongor	2019	6	20	18.3	4.1	0.7
Bayankhongor	2019	6	21	19.7	4.1	3
Bayankhongor	2019	6	22	19.9	4.9	0.7

### 2. Satellite Data /soil moisture denotations indicating rainfall /

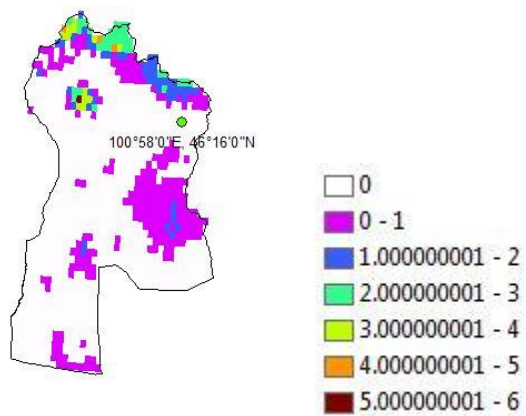
I use ArcMap, which is the main component of Esri's ArcGIS suite of geospatial processing programs and used primarily to view, edit, create, and analyze geospatial data. ArcMap allows the user to explore data within a data set, symbolize features accordingly, and create maps.

A specific location of the Bayankhongor Precipitation Scale (Longitudinal Latitude) has taken and a dot is place on the satellite data open in ArcGIS software to find the corresponding precipitation satellite data of the area to which the point belongs.

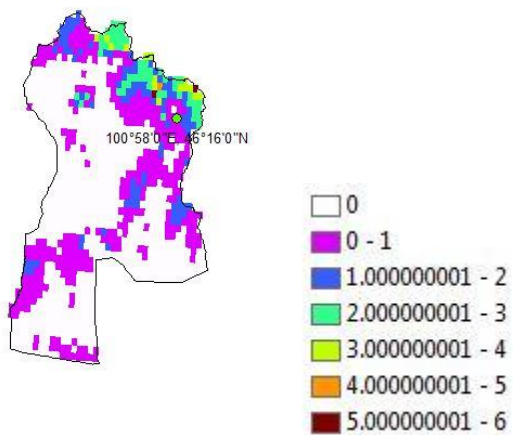
## Day 1 - result



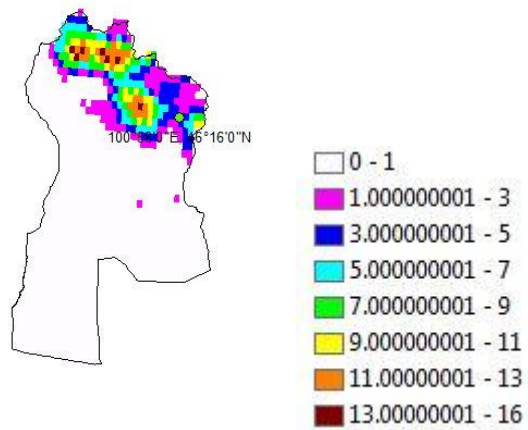
## Day 2 - result



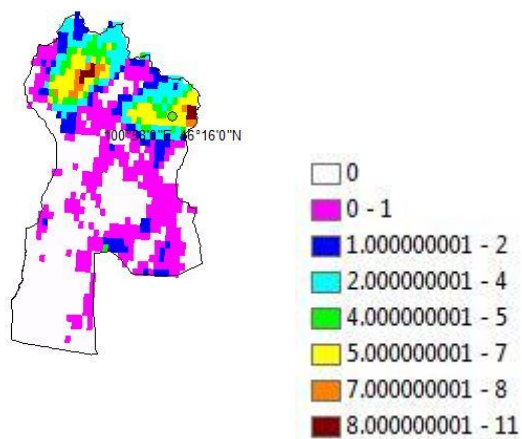
## Day 3 - result



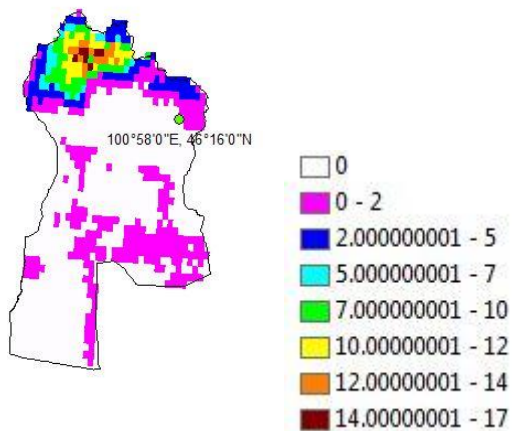
## Day 4 – result



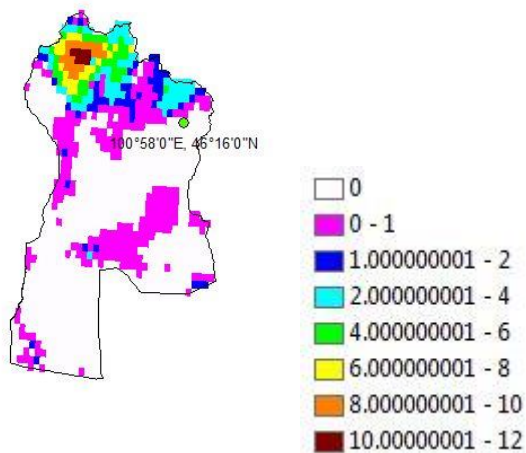
## Day 5 – result



## Day 6 – result

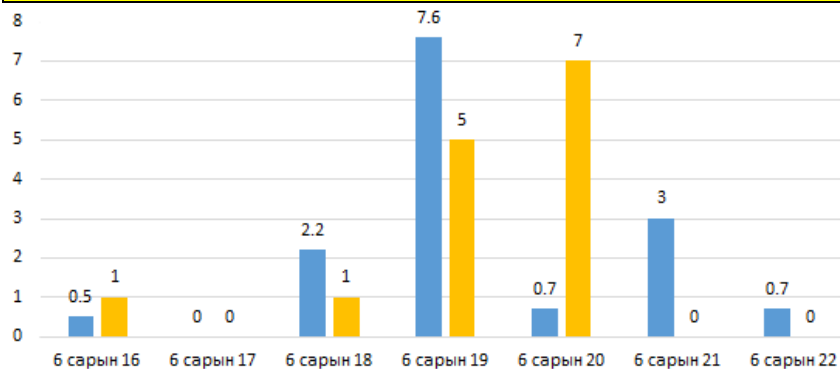


## Day 7 – result



### Final Comparison:

Total daily precipitation, millimeter



- Yellow is Satellite
- Blue is Station

Satellite data is of much higher quality, the rapid movement of the clouds due to sudden winds makes the data slightly different from the actual precipitation data.

Station data are close to the actual precipitation data, but the impact of evaporation has changed the base value to some extent.

As a result, both of these data are accurate, also we should advisable to use station data in windy areas and satellite data in low wind areas. It can show more accurate values in your research. Thank you

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2021-1-13