

# FFGS Products Relevant to Agriculture

HYDROLOGIC RESEARCH CENTER

4 May 2015

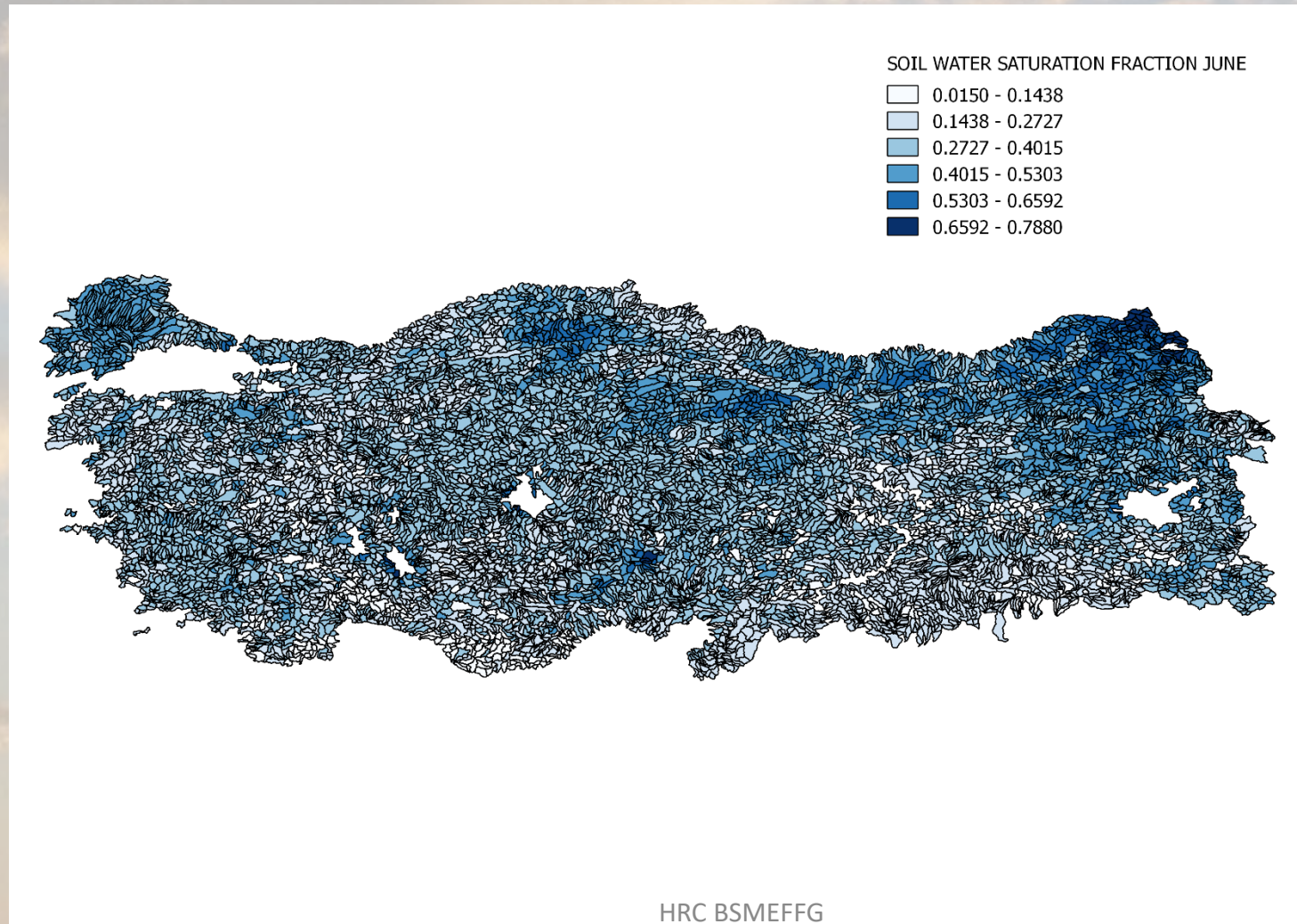


# Methodology

- Step 1:* Download routinely the composite product file (in txt or csv form) from the FFGS web-based interface and extract the basin ID (typical label is BASIN) and total soil water saturation fraction (typical label is ASMT06) values.
- Step 2:* Develop a database with these values for computation of statistics (mean and standard deviation) of the total soil water saturation fraction. (Contact HRC if you need historical data from development phase.)
- Step 3:* Compute the monthly climatological average and associated standard deviation from the historical data using Excel, GIS, or other software.
- Step 4:* Compute the difference of the current real-time estimate of total soil water saturation fraction from the FFGS composite file from the climatological mean from the same month as present, and divide the difference by the climatological standard deviation for the present month. Result: ISWF – Index of Soil Water Fraction
- Step 5:* Assess the magnitude of the ISWF index within the region or country of interest and identify negative values that indicate significant current deficit of total soil water saturation fraction from its climatological value for the present month. Values less than -0.5 are good candidates. Verify that the abnormally low ISWF computed for the basins is in accordance with the past estimates from previous weeks and that there is evidence of drought in the region.
- Step 6:* Using QGIS prepare ISWF maps of the region indicating the basins with abnormally low ISWF. It is possible that in these basins plants and crops would require irrigation. This information may be useful as an advisory for agricultural agencies. And to establish experience with the total soil water behavior in a region or country.
- Step 7:* When and if available, compare the system advisories to other indices of hydrological drought.

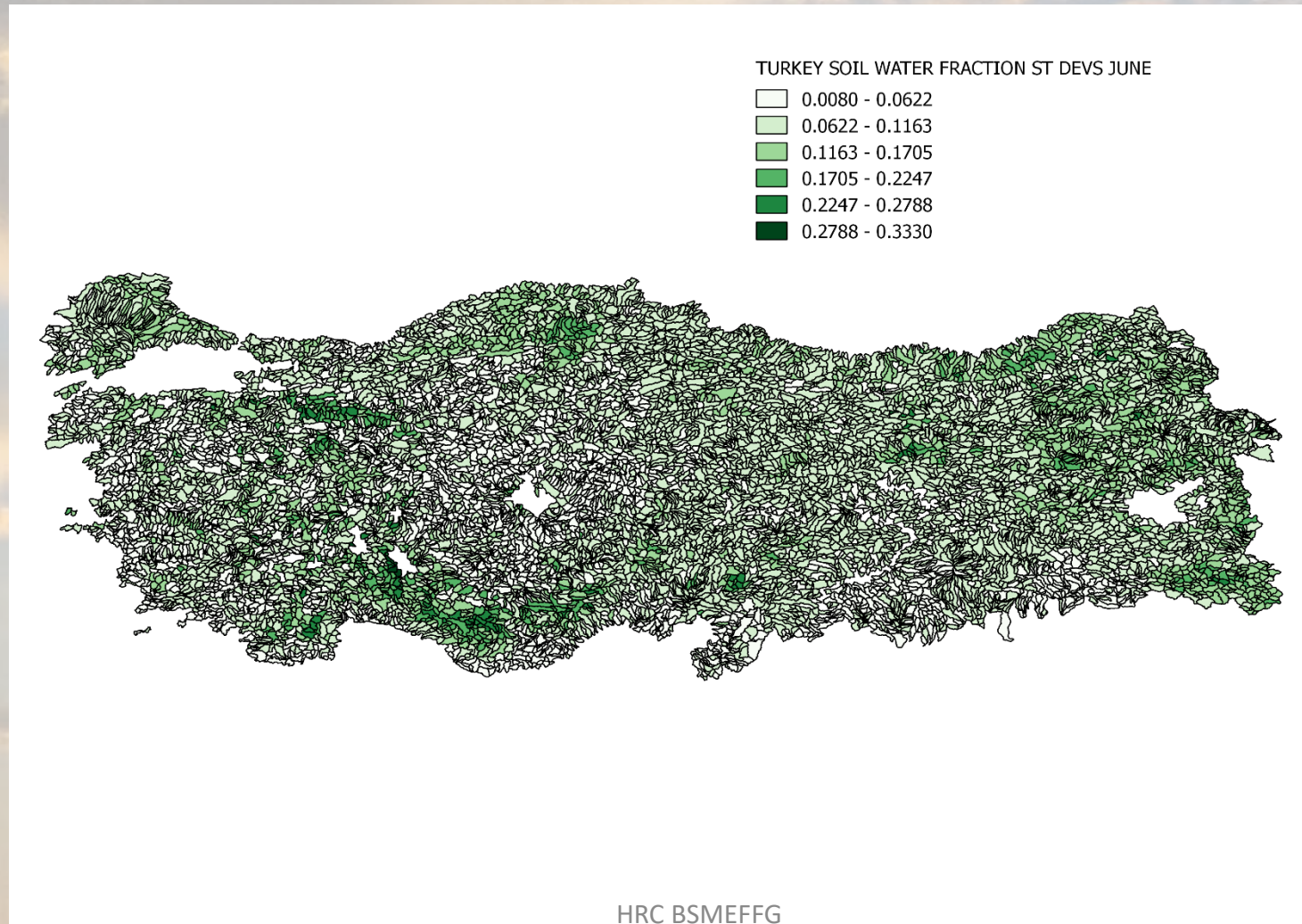


# Example from Turkey – Mean Climatology Soil Water Fraction



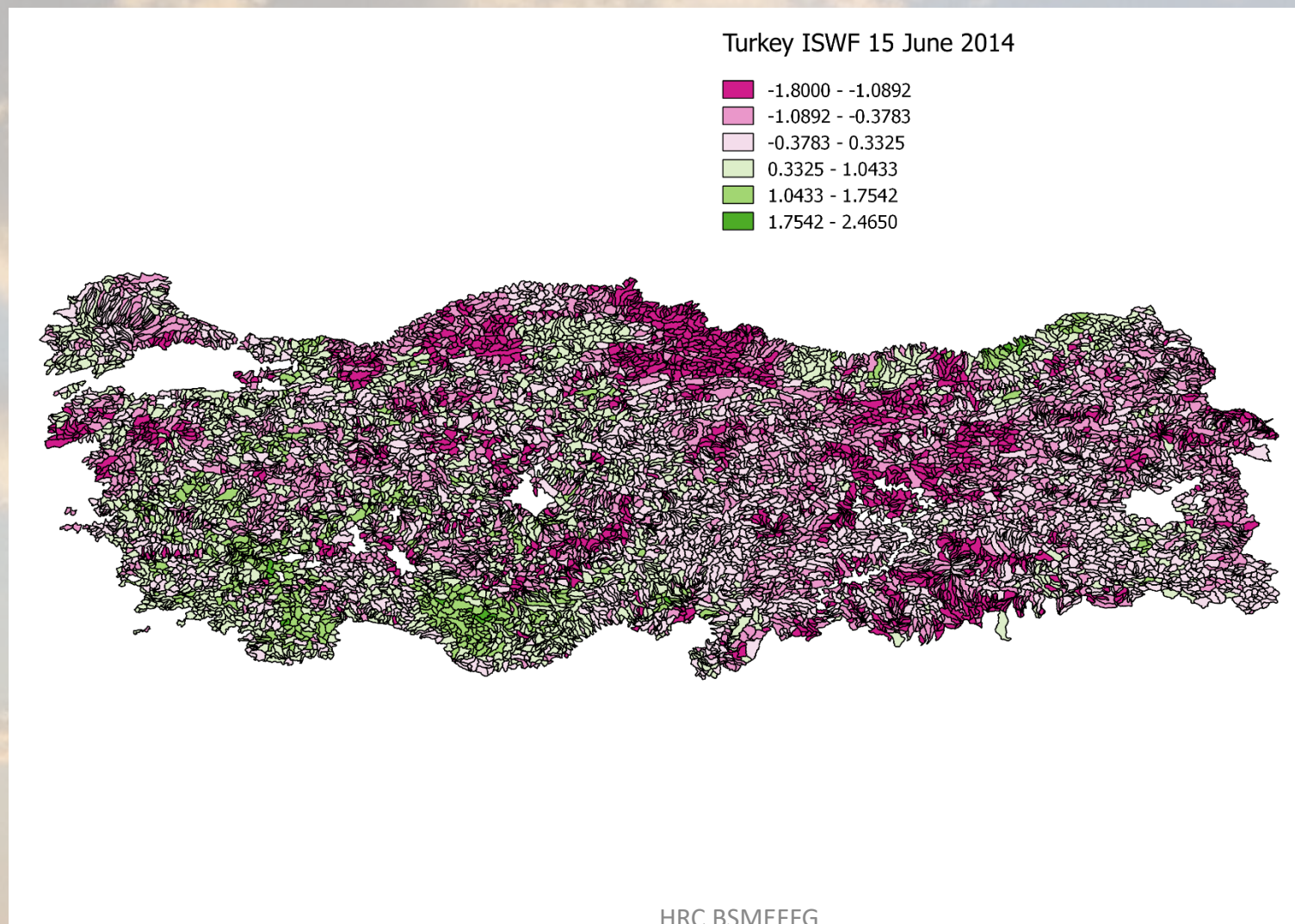


# Example from Turkey – St Dev Climatology Soil Water Fraction

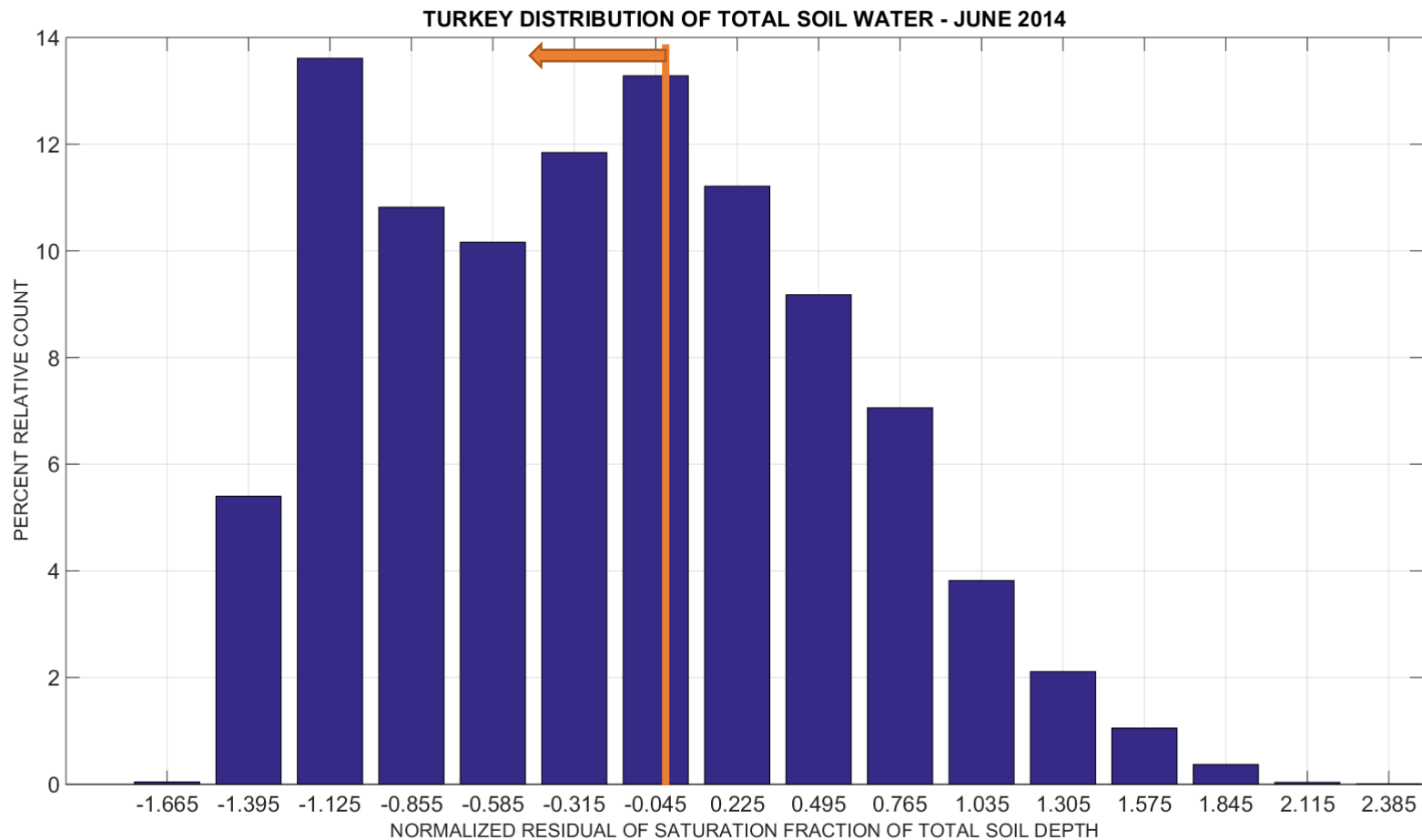




# Example from Turkey – ISWF JUNE 2014

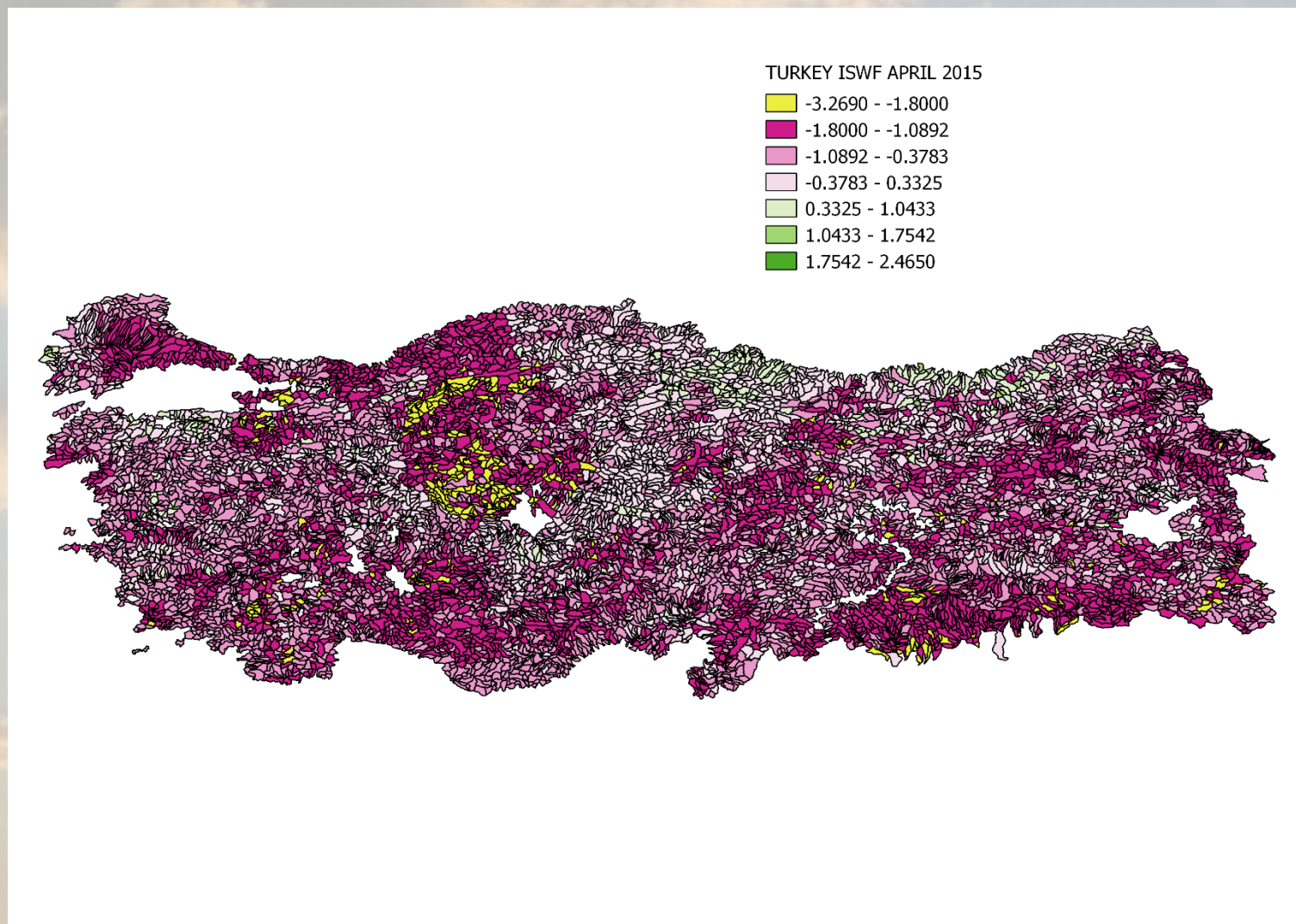


# Example from Turkey – Frequency over all of Turkey June 2014





# Example from Turkey – ISWF APRIL 2015



# Example from Turkey – Frequency over all of Turkey April 2015

