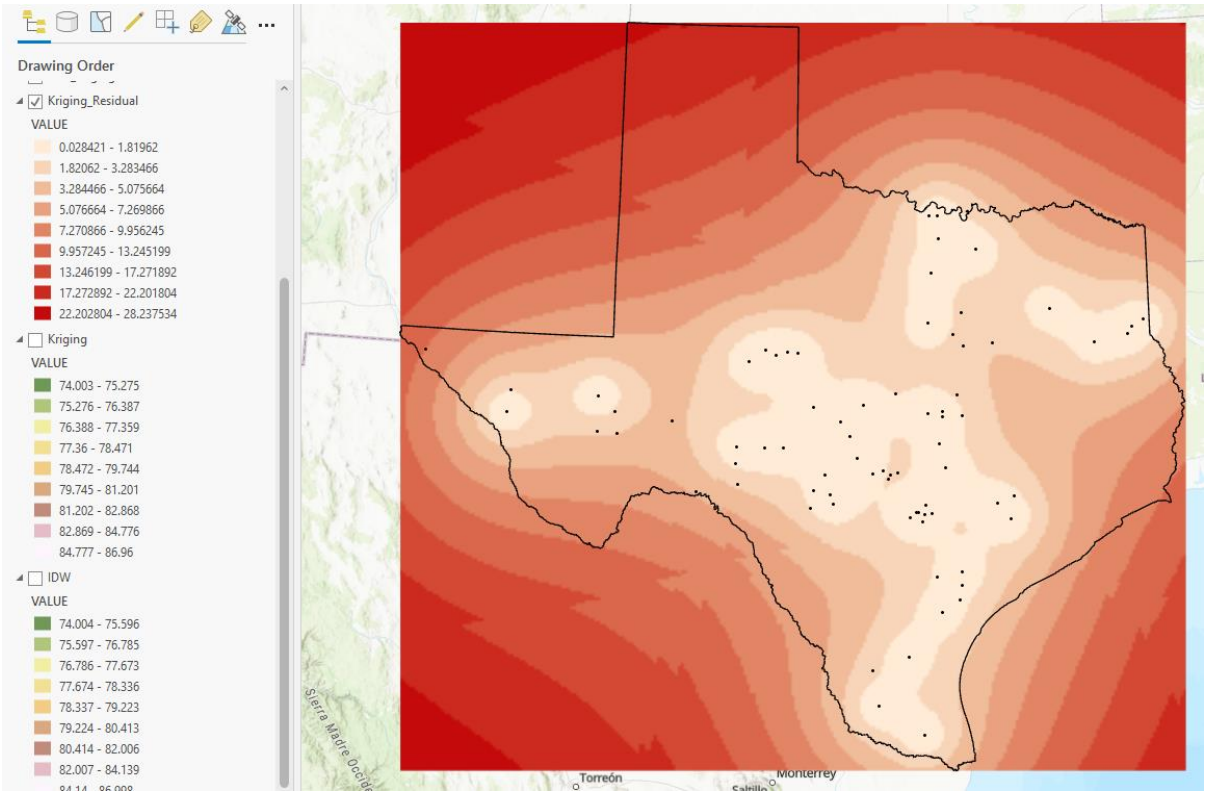
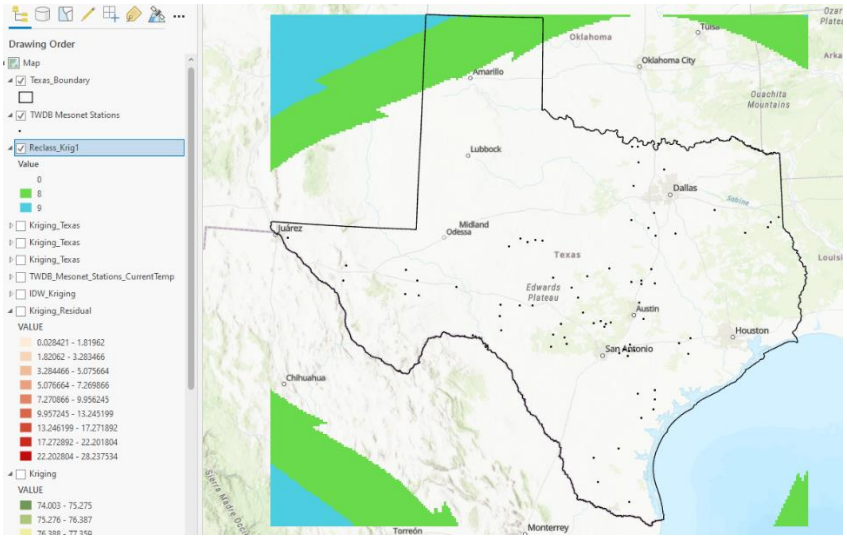
# Spatial Interpolation

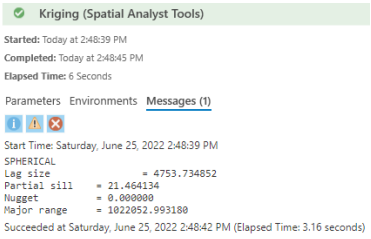
1. Based on the outcomes from Step 6 in Part 2, which area of the state has the least accurate interpolated values? Why is this the case?

The least accurate interpolated values are locations with the furthest radial distance from any reported weather station. As measurement is naturally more accurate the closer you are to the source, this makes sense. The closer distance also reduces any errors that impact the measurement as getting an exact reading only allows for measurement error (not the butterfly effect as well). As there are not any weather stations in the Texas panhandle (north western block of Texas), this area is therefore naturally less accurate than the rest of the state. This area also contains a difference in elevation and vegetation than the rest of the state being more mountainous and frequent to snowfall as compared to the El Paso area which is desert or remainder of the state which is more moderate.




The image above shows the residual values and identifies the largest error temperatures. In the case of Texas this is up in the northern corner panhandle. The image below shows the two highest residual bands (17.3-22.2 in green and 22.2-28.2 in blue) the other bands have been removed for ease of visualization. As you can see, all the values are located north of Amarillo, TX and these residuals all fall in the second largest band, with the exception of the Texas, Oklahoma, New Mexico Corner which has slightly more extreme residuals.



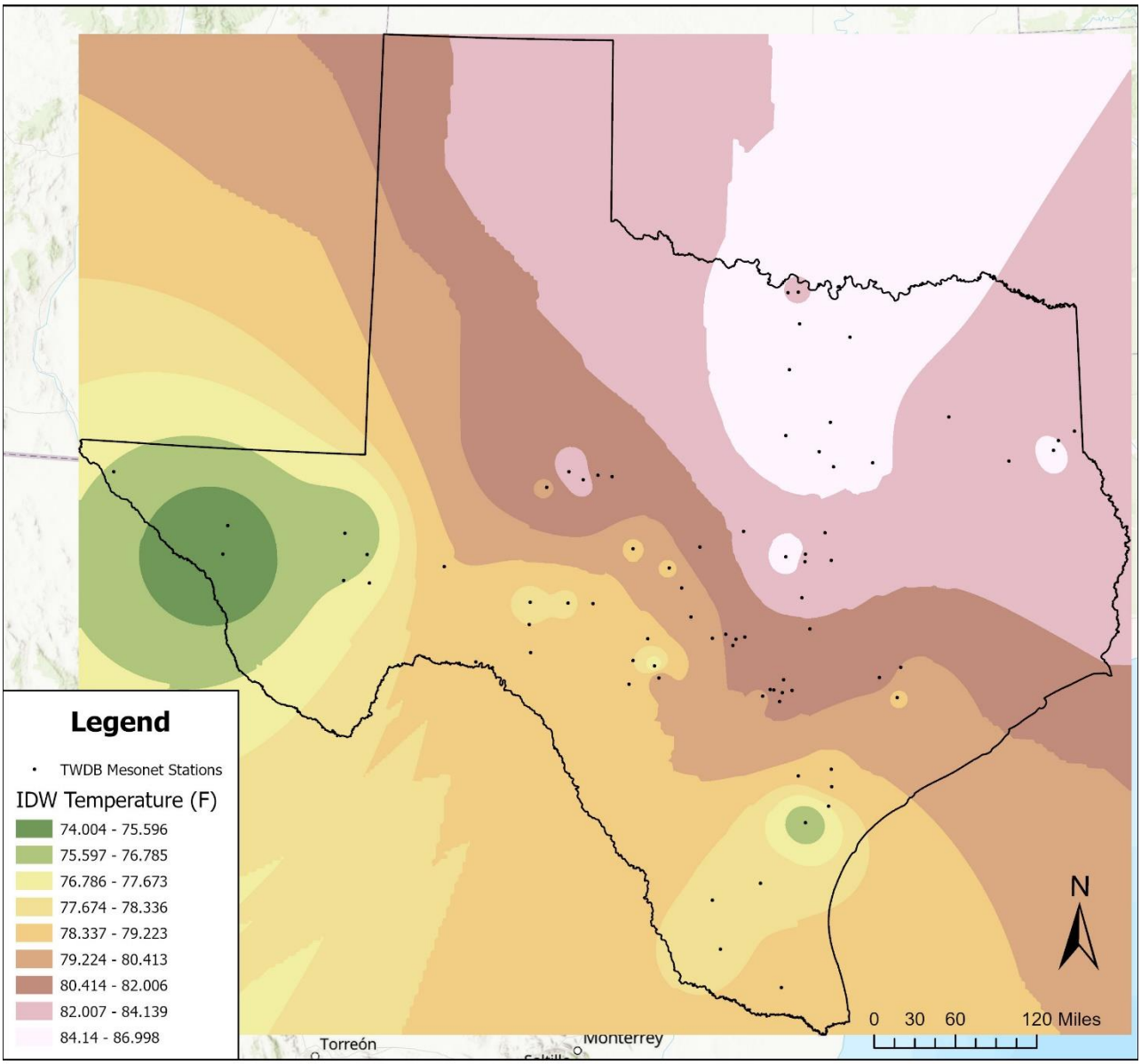



2. Print two maps showing the results of IDW and Kriging. (**Note**: You need to print the output surface raster for Kriging, NOT the variance of prediction raster)

## IDW

# Texas Current Temperature

## June 23, 2022 (degrees Fahrenheit)



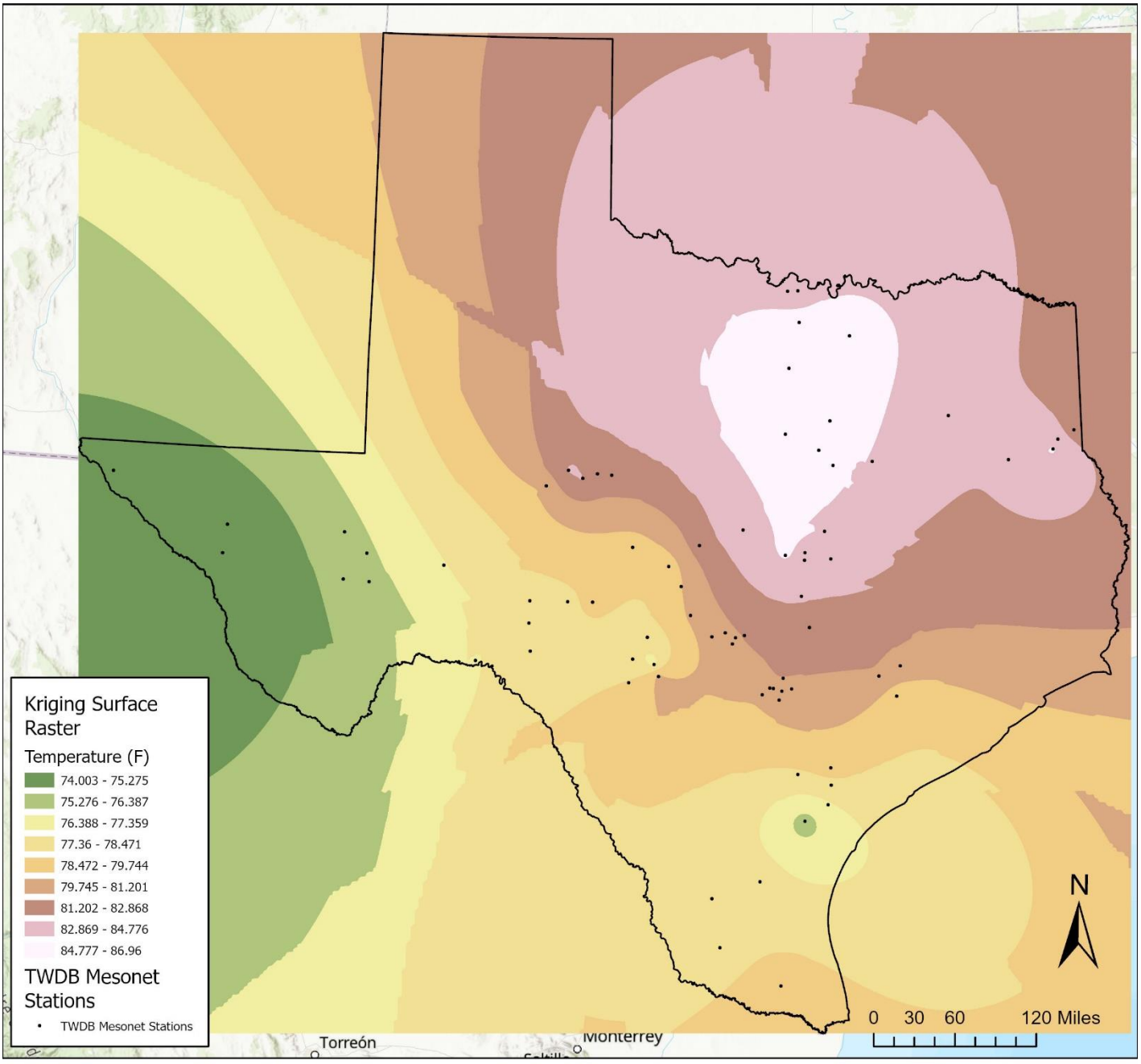

Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, Esri, USGS

Spatial Reference
Name: WGS 1984 UTM Zone 14N
Map Units: Meter

Created by Megan Morgan June 23, 2022

# Texas Current Temperature

## June 23, 2022 (degrees Fahrenheit)




Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, Esri, USGS

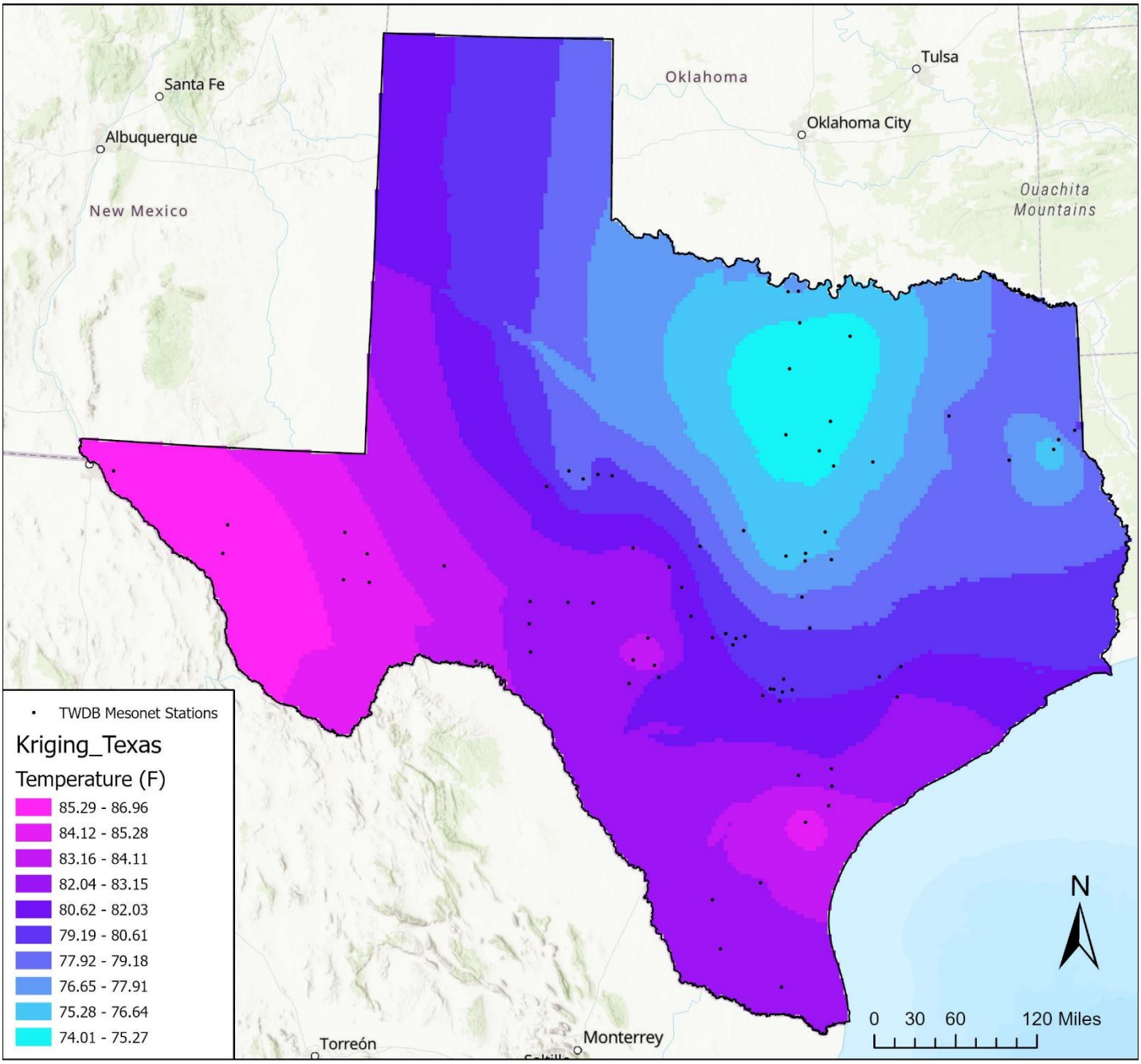
Spatial Reference
Name: WGS 1984 UTM Zone 14N
Map Units: Meter

Created by Megan Morgan June 23, 2022

## Final Map

# Texas Current Temperature

## June 23, 2022 (degrees Fahrenheit)




Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, Esri, USGS

Spatial Reference
Name: WGS 1984 UTM Zone 14N
Map Units: Meter

Created by Megan Morgan June 23, 2022