

Lab4- Interpolation

the code for extracting NDAWN data was supplied to us (see other jupyter notebook "NDAWN\_Requests\_lab04.ipynb" for code on extraction and data cleaning):

IDW Interpolation

```
In [5]: #I've already loaded the cleaned station data with MIN, MAX and Ave temp for the 30 day increment (Nov1-Nov30)

#Now, let's interpolate Ave Air Temps via IDW
arcpy.ddd.Idw("Ave_NDAWN_temps_XYTableToPoint",
              "Avg_Air_Temp__Degrees_F__y",
              r"D:\Fall 2021\ArcGIS1\Labs\lab3-4\ArcGIS_Lab4_interpolation\ArcGIS_Lab4_interpolation.gdb\Idw_Ave_Air_Temp",
              0.0132,
              2,
              "VARIABLE 12",
              None)

#Interpolate Max temps with IDW
arcpy.ddd.Idw("Ave_NDAWN_temps_XYTableToPoint",
              "MaxTemp30day",
              r"D:\Fall 2021\ArcGIS1\Labs\lab3-4\ArcGIS_Lab4_interpolation\ArcGIS_Lab4_interpolation.gdb\Idw_Ave_Air_Temp",
              0.0132,
              2,
              "VARIABLE 12",
              None)

#Interpolate Min temps with IDW
arcpy.ddd.Idw("Ave_NDAWN_temps_XYTableToPoint",
              "MinTemp30day",
              r"D:\Fall 2021\ArcGIS1\Labs\lab3-4\ArcGIS_Lab4_interpolation\ArcGIS_Lab4_interpolation.gdb\Idw_Ave_Air_Temp",
              0.0132,
              2,
              "VARIABLE 12",
              None)
```

Output

D:\Fall 2021\ArcGIS1\Labs\lab3-4\ArcGIS\_Lab4\_interpolation\ArcGIS\_Lab4\_interpolation.gdb\ldw\_Ave\_NDAW4

Messages

Start Time: Tuesday, November 30, 2021 9:22:17 PM  
WARNING 000957: Skipping feature(s) because of NULL or EMPTY geometry.  
Succeeded at Tuesday, November 30, 2021 9:22:20 PM (Elapsed Time: 3.24 seconds)

Ordinary Kriging Interpolation

```
In [6]: #interpolate the Ave temp with Kriging
out_surface_raster1 = arcpy.sa.Kriging("Ave_NDAWN_temps_XYTableToPoint",
                                       "Avg_Air_Temp__Degrees_F__y",
                                       "Spherical 0.013200 # # #",
                                       0.0132,
                                       "VARIABLE 12",
                                       None); out_surface_raster.save(r"D:\Fall 2021\ArcGIS1\Labs\lab3-4\ArcGIS_Lab4_interpolation\ArcGIS_Lab4_interpolation.gdb\Kriging_Ave_Air_Temp")

# Next, we will interpolate the Max temp Values via Ordinary Kriging
out_surface_raster2 = arcpy.sa.Kriging("Ave_NDAWN_temps_XYTableToPoint",
                                       "MaxTemp30day",
                                       "Spherical 0.013200 # # #",
                                       0.0132,
                                       "VARIABLE 12",
                                       None); out_surface_raster.save(r"D:\Fall 2021\ArcGIS1\Labs\lab3-4\ArcGIS_Lab4_interpolation\ArcGIS_Lab4_interpolation.gdb\Kriging_MaxTemp30day")

#interpolate the Min temp with Kriging
out_surface_raster3 = arcpy.sa.Kriging("Ave_NDAWN_temps_XYTableToPoint",
                                       "MinTemp30day",
                                       "Spherical 0.013200 # # #",
                                       0.0132,
                                       "VARIABLE 12",
                                       None); out_surface_raster.save(r"D:\Fall 2021\ArcGIS1\Labs\lab3-4\ArcGIS_Lab4_interpolation\ArcGIS_Lab4_interpolation.gdb\Kriging_MinTemp30day")
```

Global polynomial interpolation

```
In [7]: #average Temp
arcpy.ga.GlobalPolynomialInterpolation("Ave_NDAWN_temps_XYTableToPoint",
                                       "Avg_Air_Temp__Degrees_F__y",
                                       "GPI_Ave_temp1_stats",
                                       r"D:\Fall 2021\ArcGIS1\Labs\lab3-4\ArcGIS_Lab4_interpolation\ArcGIS_Lab4_interpolation.gdb\GPI_Ave_temp1_stats",
                                       0.0132,
                                       1,
                                       None)

#Max temp
arcpy.ga.GlobalPolynomialInterpolation("Ave_NDAWN_temps_XYTableToPoint",
                                       "MaxTemp30day",
                                       "GPI_Ave_temp1_stats",
                                       r"D:\Fall 2021\ArcGIS1\Labs\lab3-4\ArcGIS_Lab4_interpolation\ArcGIS_Lab4_interpolation.gdb\GPI_MaxTemp30day_stats",
                                       0.0132,
                                       1,
                                       None)

#Min Temp
arcpy.ga.GlobalPolynomialInterpolation("Ave_NDAWN_temps_XYTableToPoint",
                                       "MinTemp30day",
                                       "GPI_Ave_temp1_stats",
                                       r"D:\Fall 2021\ArcGIS1\Labs\lab3-4\ArcGIS_Lab4_interpolation\ArcGIS_Lab4_interpolation.gdb\GPI_MinTemp30day_stats",
                                       0.0132,
                                       1,
                                       None)
```

Output

id	value
0	a Layer object
1	D:\Fall 2021\ArcGIS1\Labs\lab3-4\ArcGIS_Lab4_interpolation\ArcGIS_Lab4_interpolation.gdb\GPI_Min_temp3_ras

Messages

Start Time: Tuesday, November 30, 2021 9:48:34 PM  
Succeeded at Tuesday, November 30, 2021 9:48:38 PM (Elapsed Time: 3.87 seconds)

```
In [ ]:
```