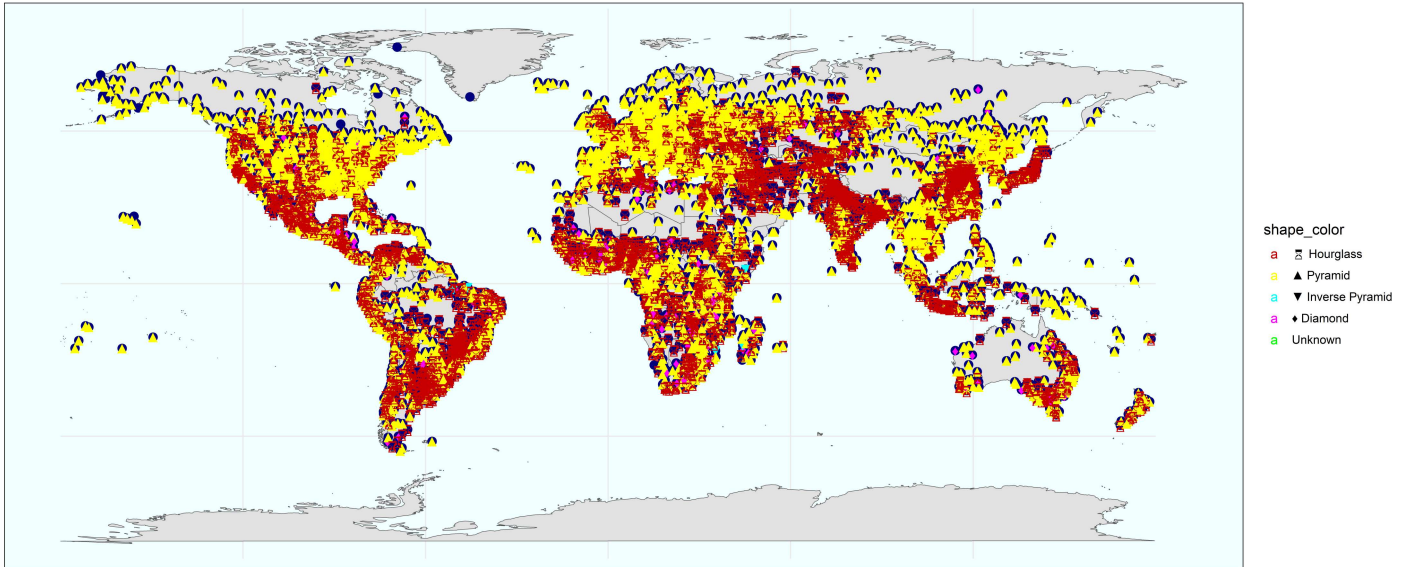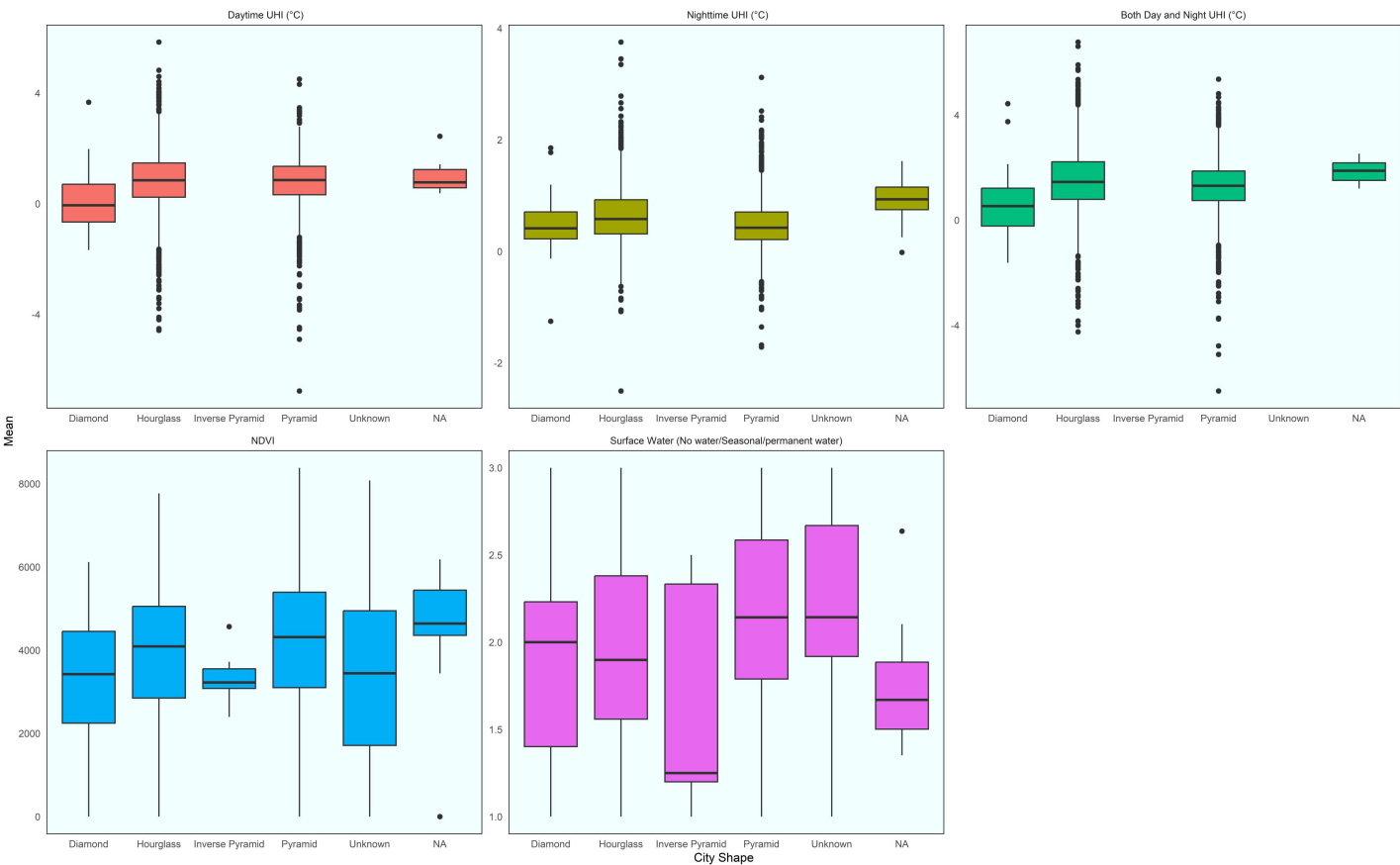# UHI_EDA_Analysis

Pradnya Raut

2024-11-20

Maps

City Shapes
Based on building height distribution

```
## Simple feature collection with 6 features and 19 fields
## Geometry type: POINT
## Dimension:     XY
## Bounding box:  xmin: -171.0125 ymin: 57.8875 xmax: -101.6625 ymax: 65.5875
## Geodetic CRS:  WGS 84
## # A tibble: 6 × 20
##   City    coordinates `Unnamed: 0` mean_ndvi mean_surface_water mean_uhi_DayNight
##   <chr>   <chr>              <dbl>     <dbl>              <dbl>             <dbl>
## 1 Broch… [-101.6624…          202     1866.                  3                NA
## 2 Eagle   [-141.1958…         305     2408.                2.5                NA
## 3 Emmon… [-164.5208…          373     2971.                 NA                NA
## 4 Lavre… [-171.0124…          504      794.               2.33                NA
## 5 Lutse… [-110.7375…           91     1330.               2.75                NA
## 6 Mekor… [-166.1958…          337     5845                   2                NA
## # ℹ 14 more variables: mean_uhi_daytime <dbl>, mean_uhi_Nighttime <dbl>,
## #   Continent <chr>, Class <chr>, Skewness <dbl>, Dip_Statistic <dbl>,
## #   Mean_Height <dbl>, shape <fct>, shape_emoji <chr>, shape_color <chr>,
## #   size_emoji <dbl>, lon <dbl>, lat <dbl>, geometry <POINT [°]>
```

```
## Warning: Removed 7095 rows containing non-finite outside the scale range
## (`stat_boxplot()`).
```
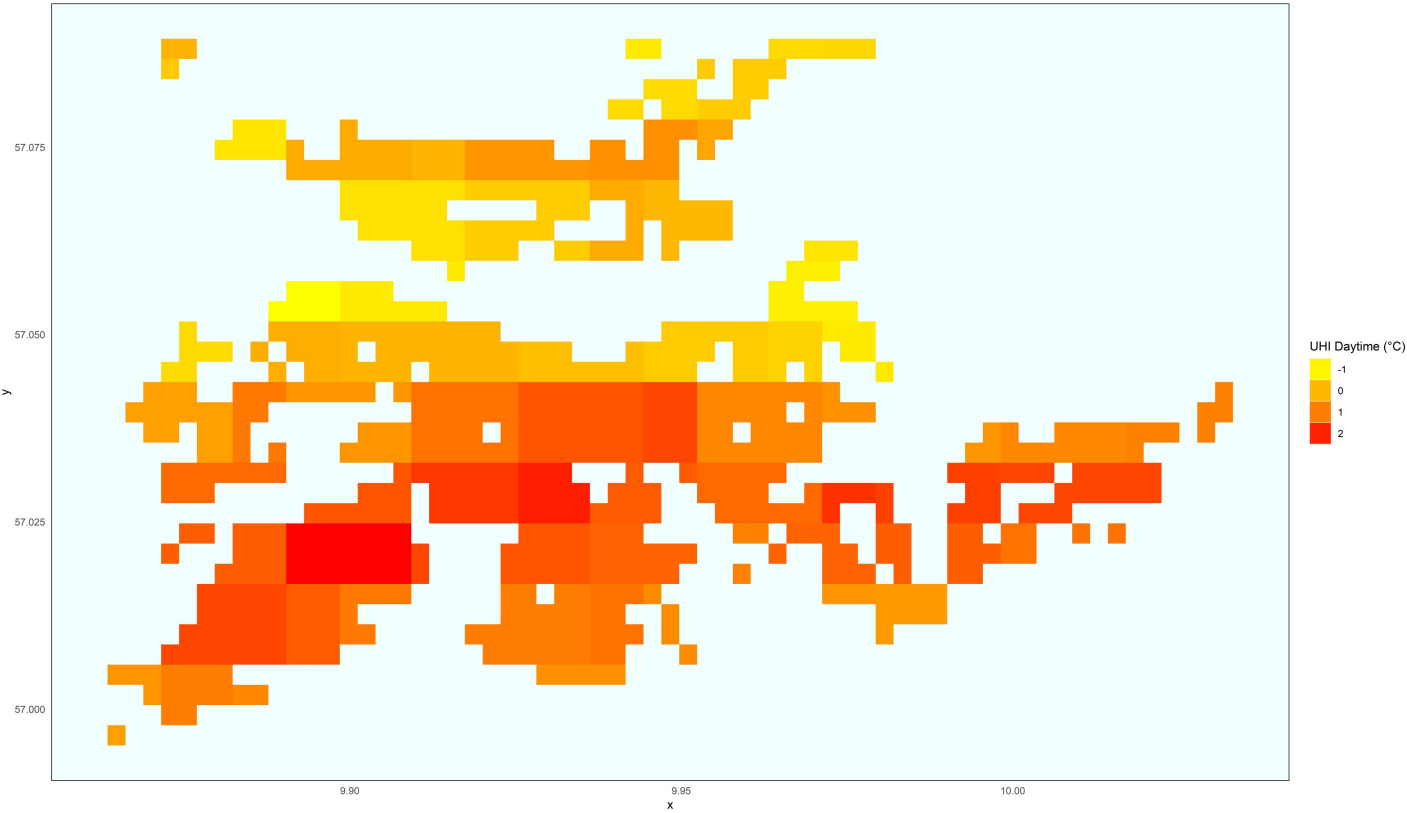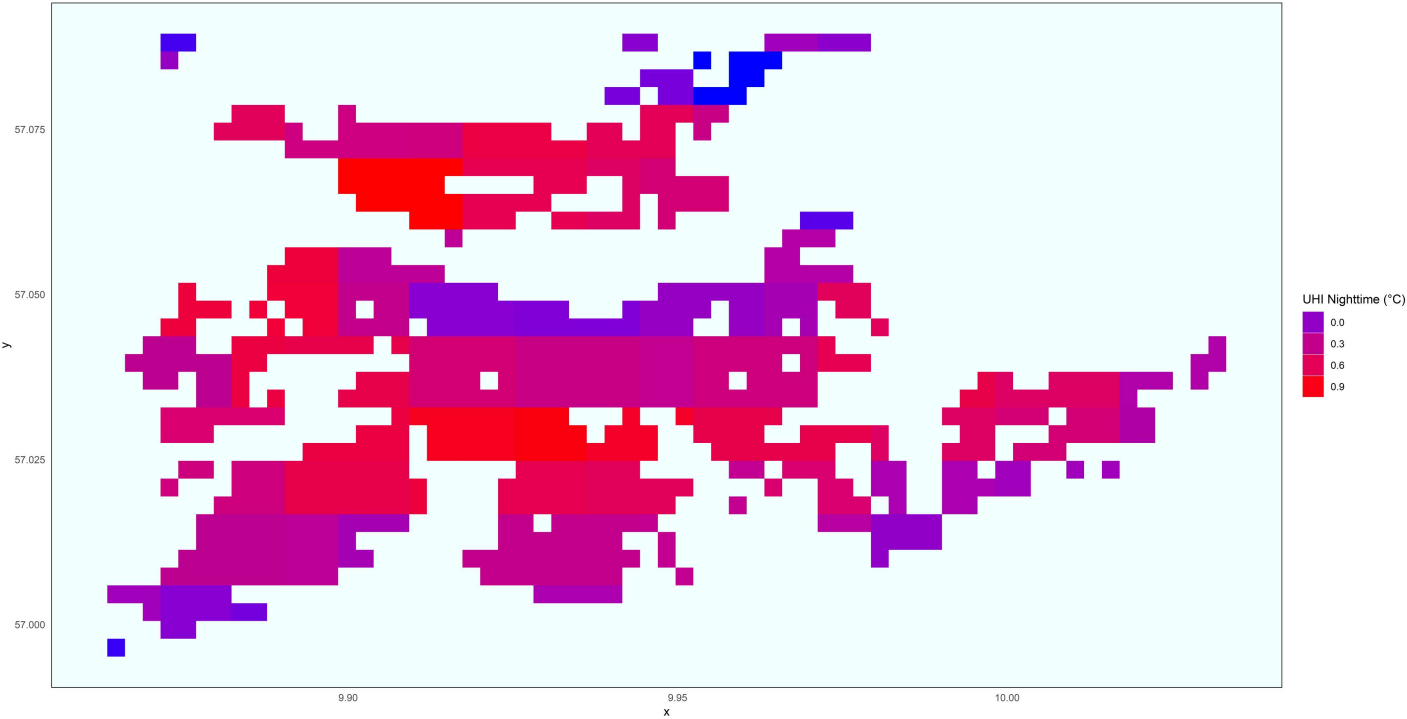
```
## class       : SpatRaster
## dimensions  : 43, 68, 2  (nrow, ncol, nlyr)
## resolution  : 0.002694934, 0.002694934  (x, y)
## extent      : 9.849982, 10.03324, 56.98437, 57.10025  (xmin, xmax, ymin, ymax)
## coord. ref. : lon/lat WGS 84 (EPSG:4326)
## source      : Aalborg_uhi.tif
## names       : Aalborg_uhi_1, Aalborg_uhi_2
## min values  :     -1.186516,    -0.2753552
## max values  :      2.113822,     0.9442680
## [1] "Aalborg_uhi_1"
## class       : SpatRaster
## dimensions  : 52, 82, 1  (nrow, ncol, nlyr)
## resolution  : 0.002245788, 0.002245788  (x, y)
## extent      : 9.850027, 10.03418, 56.98238, 57.09917  (xmin, xmax, ymin, ymax)
## coord. ref. : lon/lat WGS 84 (EPSG:4326)
## source      : Aalborg_NDVI.tif
## name        : NDVI_mean
## min value   : -1306.000
## max value   :  7139.435
## [1] "NDVI"
## class       : SpatRaster
## dimensions  : 43, 68, 1  (nrow, ncol, nlyr)
## resolution  : 0.002694946, 0.002694946  (x, y)
## extent      : 9.850027, 10.03328, 56.98463, 57.10051  (xmin, xmax, ymin, ymax)
## coord. ref. : lon/lat WGS 84 (EPSG:4326)
## source      : Aalborg_SWATER.tif
## name        : waterClass
## min value   :             1
## max value   :             3
## [1] "SWATER"
```
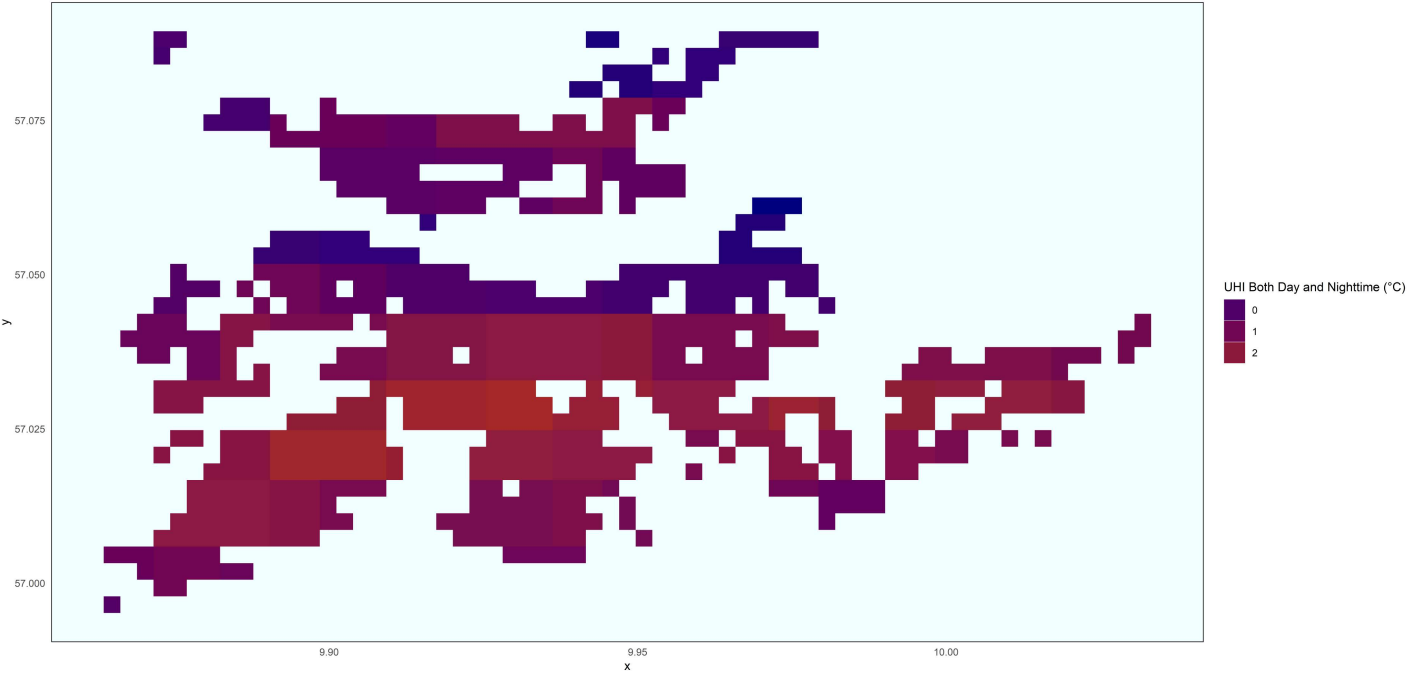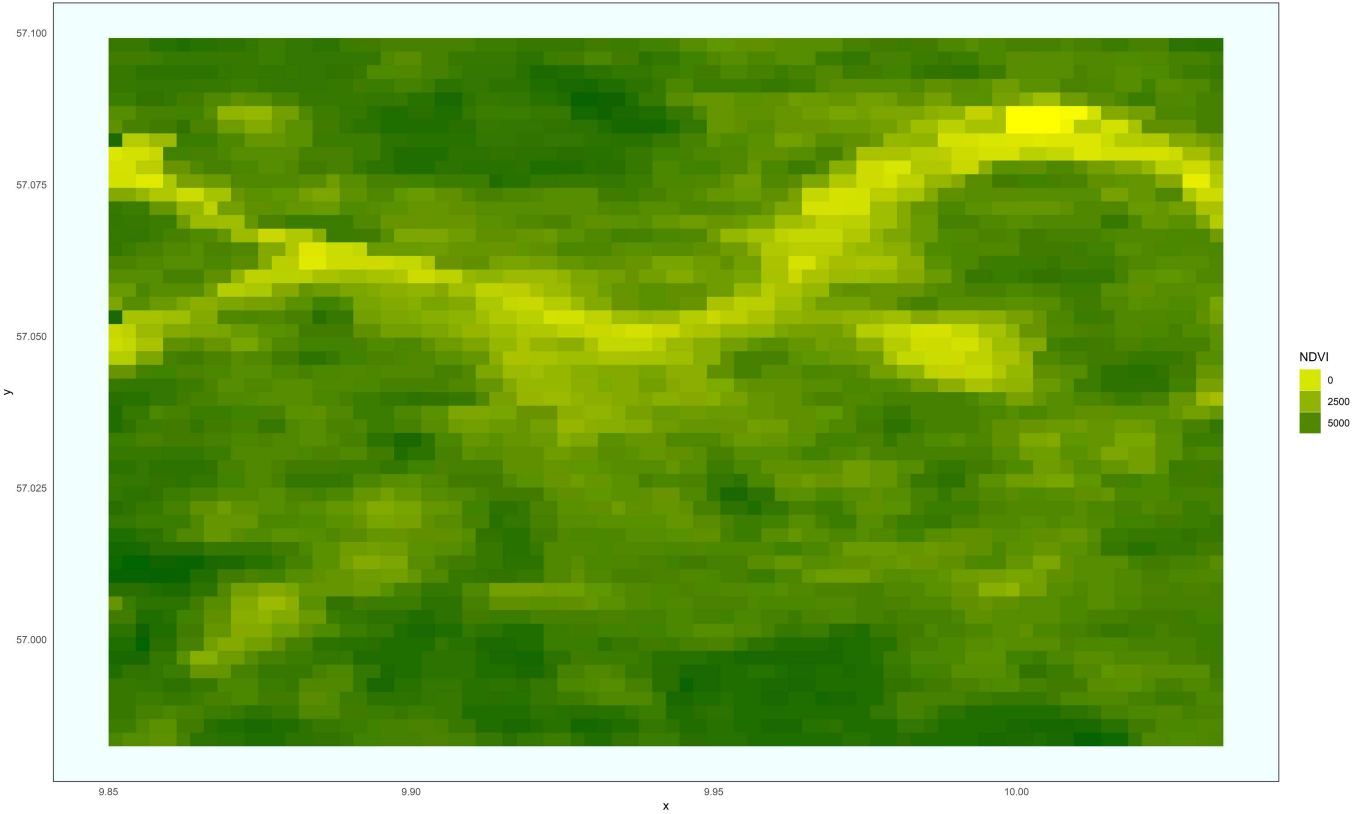
Day time UHI
for city Aalborg

UHI Daytime (°C)
-1
0
1
2

Night time UHI
for city Aalborg

UHI Nighttime (°C)
0.0
0.3
0.6
0.9

Both day and night time UHI
for city Aalborg

UHI Both Day and Nighttime (°C)

NDVI
for city Aalborg

NDVI

Day time UHI
for city Aalborg