Cook East Hand Harvest Yields | Data Exploration

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Set WD, define constants

```
library(xlsx)
```

```
## Warning: package 'xlsx' was built under R version 3.4.3
```

```
## Loading required package: rJava
```

```
## Warning: package 'rJava' was built under R version 3.4.3
```

```
## Loading required package: xlsxjars
```

```
## Warning: package 'xlsxjars' was built under R version 3.4.3
```

```
setwd("C:\\Dev\\Projects\\CookEastPlantHandHarvest\\R\\dataExplorationLevel1")
source("graphing-funcs.R")
```

```
## rgdal: version: 1.2-13, (SVN revision 686)
##  Geospatial Data Abstraction Library extensions to R successfully loaded
##  Loaded GDAL runtime: GDAL 2.2.0, released 2017/04/28
##  Path to GDAL shared files: C:/Users/brcarlson/Documents/R/win-library/3.4/rgdal/gdal
##  Loaded PROJ.4 runtime: Rel. 4.9.3, 15 August 2016, [PJ_VERSION: 493]
##  Path to PROJ.4 shared files: C:/Users/brcarlson/Documents/R/win-library/3.4/rgdal/proj
##  Linking to sp version: 1.2-5
```

```
## Loading required package: raster
```

```
# Load input polygons
strips <- readOGR("Input/CookEastStrips", "Field_Plan_Final")
```

```
## OGR data source with driver: ESRI Shapefile
## Source: "Input/CookEastStrips", layer: "Field_Plan_Final"
## with 25 features
## It has 7 fields
```

```
boundary <- readOGR("Input/CookEastArea", "CafCookEastArea")
```

```
## OGR data source with driver: ESRI Shapefile
## Source: "Input/CookEastArea", layer: "CafCookEastArea"
## with 1 features
## It has 5 fields
```

```
# Original strips polygon of Cook East has area with no georef points (and no yield), so remove them
georef.only <- raster::intersect(boundary, strips)
```

```
## Loading required namespace: rgeos
```

```
# Read yield data
yields <- read.xlsx("Input/L1_Aggregated2013-2016_20180417.xlsx", "CalculatedYield")
```

2013

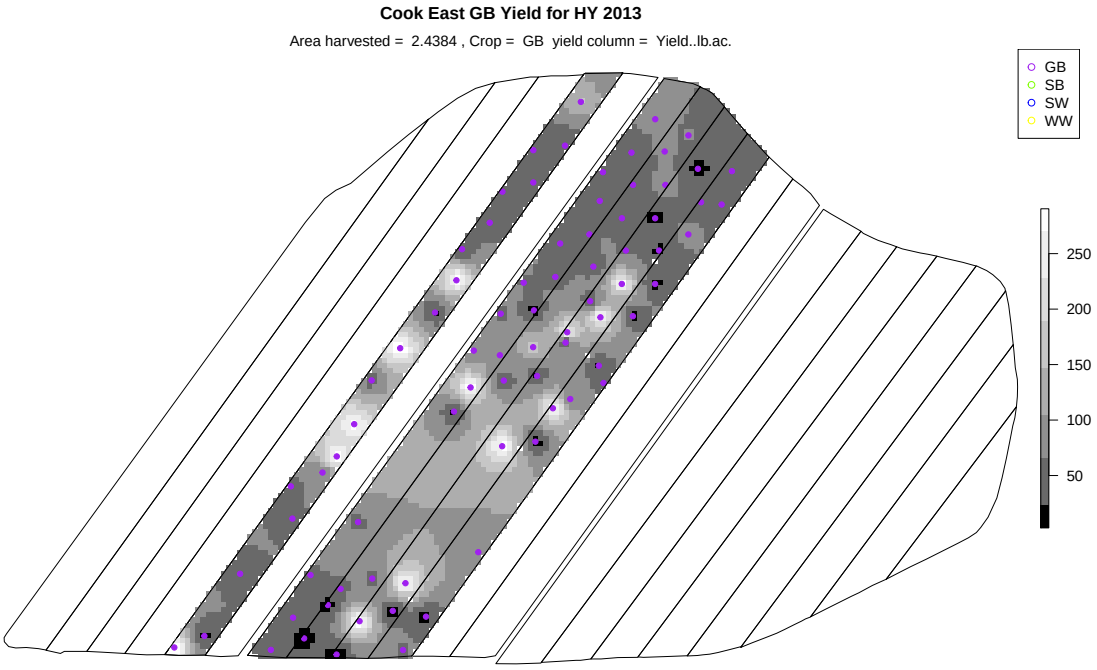
```
# Read input data and print summary
harvest.year <- 2013
d2013 <- yields[yields$HarvestYear == harvest.year,]
#summary(d2013)
```

GB

```
#summary(d2013[d2013$Crop == "GB", ])
map_yield(d2013, "Yield..lb.ac.", georef.only,
          extract_georef_field_and_strip(c(5), c(1,2,3,4), NULL, georef.only),
          harvest.year, "GB")
```

```
## Loading required namespace: deldir
```

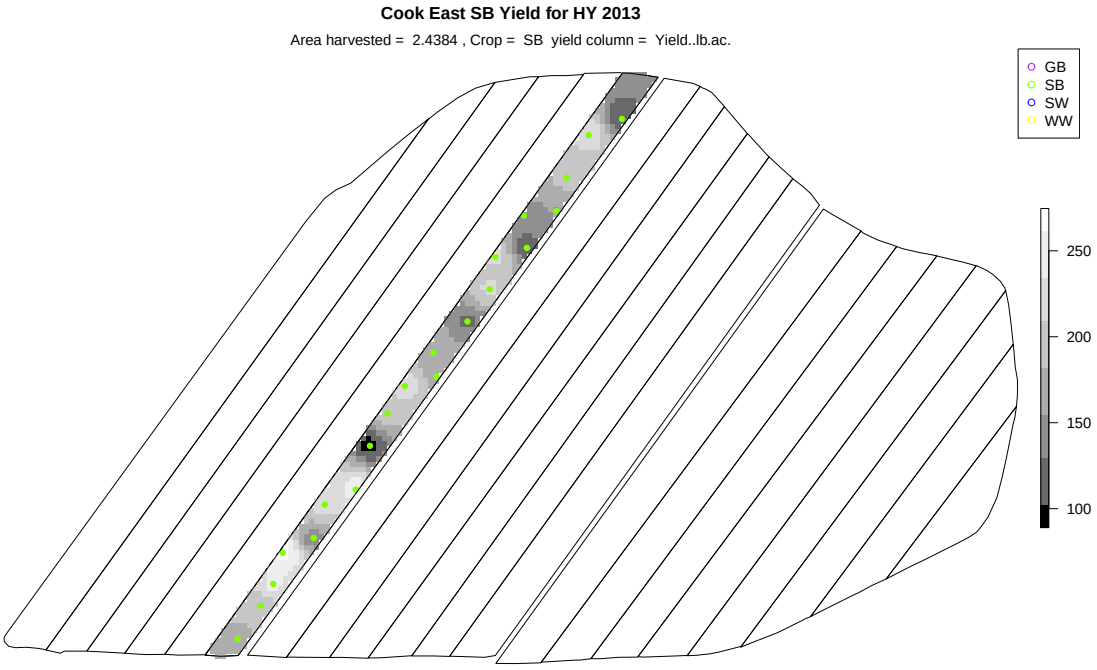
```
## [inverse distance weighted interpolation]
```



SB

```
#summary(d2013[d2013$Crop == "SB", ])
map_yield(d2013,  "Yield..lb.ac.", georef.only,
          extract_georef_field_and_strip(c(6), NULL, NULL, georef.only),
          harvest.year, "SB")
```

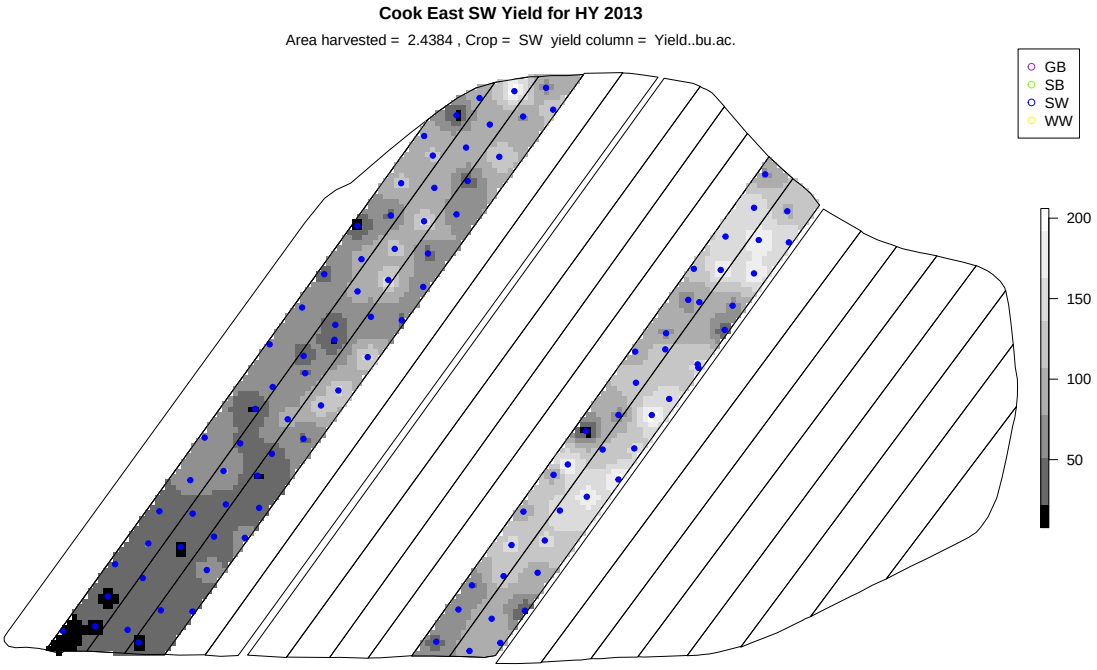
```
## [inverse distance weighted interpolation]
```



SW

```
#summary(d2013[d2013$Crop == "SW", ])
map_yield(d2013, "Yield..bu.ac.", georef.only,
          extract_georef_field_and_strip(c(2,3,4), c(5, 6), NULL, georef.only),
          harvest.year, "SW")
```

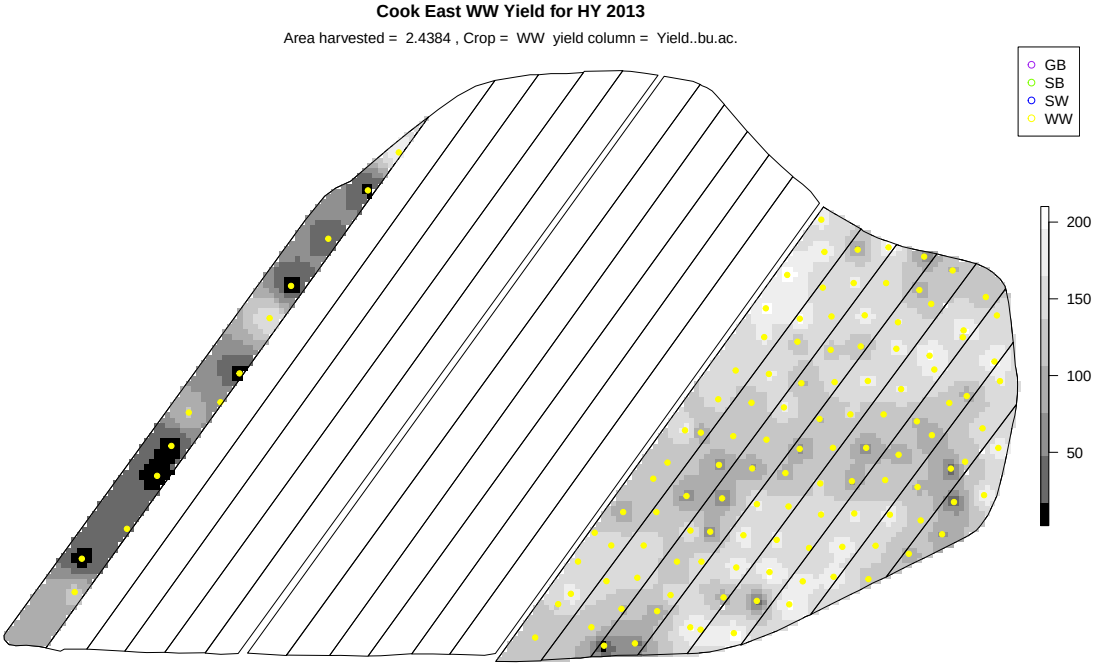
```
## [inverse distance weighted interpolation]
```



WW

```
#summary(d2013[d2013$Crop == "WW", ])
map_yield(d2013, "Yield..bu.ac.", georef.only,
          extract_georef_field_and_strip(c(1), NULL, c(1, 2, 3, 4, 5, 6, 7, 7, 8), georef.only),
          harvest.year, "WW")
```

```
## [inverse distance weighted interpolation]
```



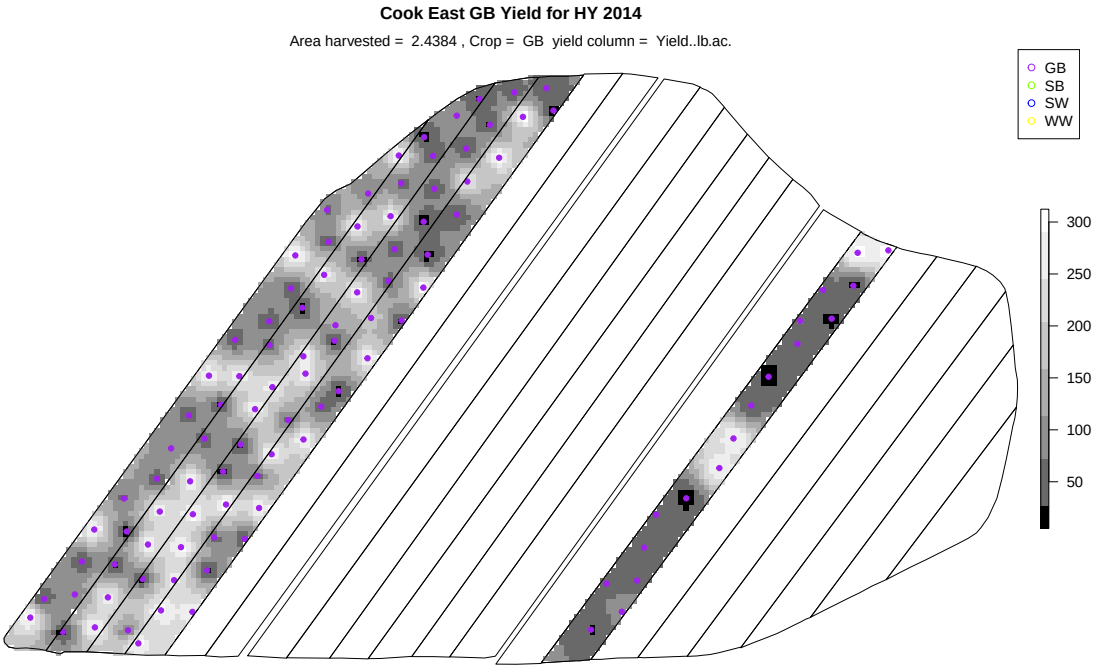
2014

```
# Read input data and print summary
harvest.year <- 2014
d2014 <- yields[yields$HarvestYear == harvest.year,]
```

GB

```
map_yield(d2014, "Yield..lb.ac.", georef.only,
          extract_georef_field_and_strip(c(1,2,3,4), NULL, c(2), georef.only),
          harvest.year, "GB")
```

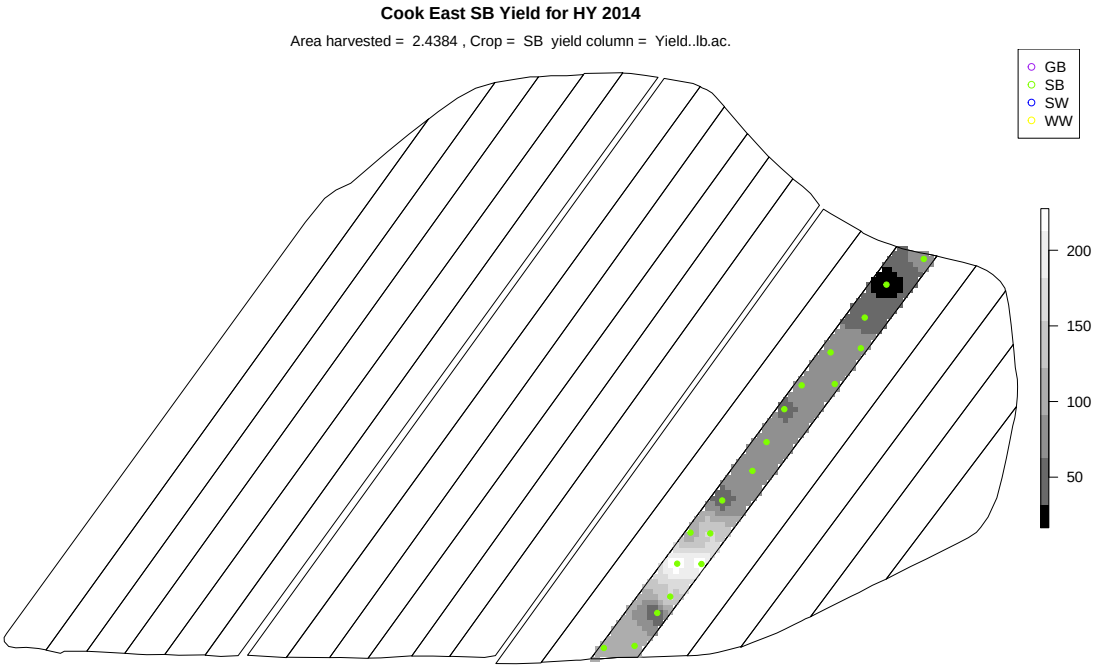
```
## [inverse distance weighted interpolation]
```



SB

```
map_yield(d2014,  "Yield..lb.ac.", georef.only,
          extract_georef_field_and_strip(NULL, NULL, c(3), georef.only),
          harvest.year, "SB")
```

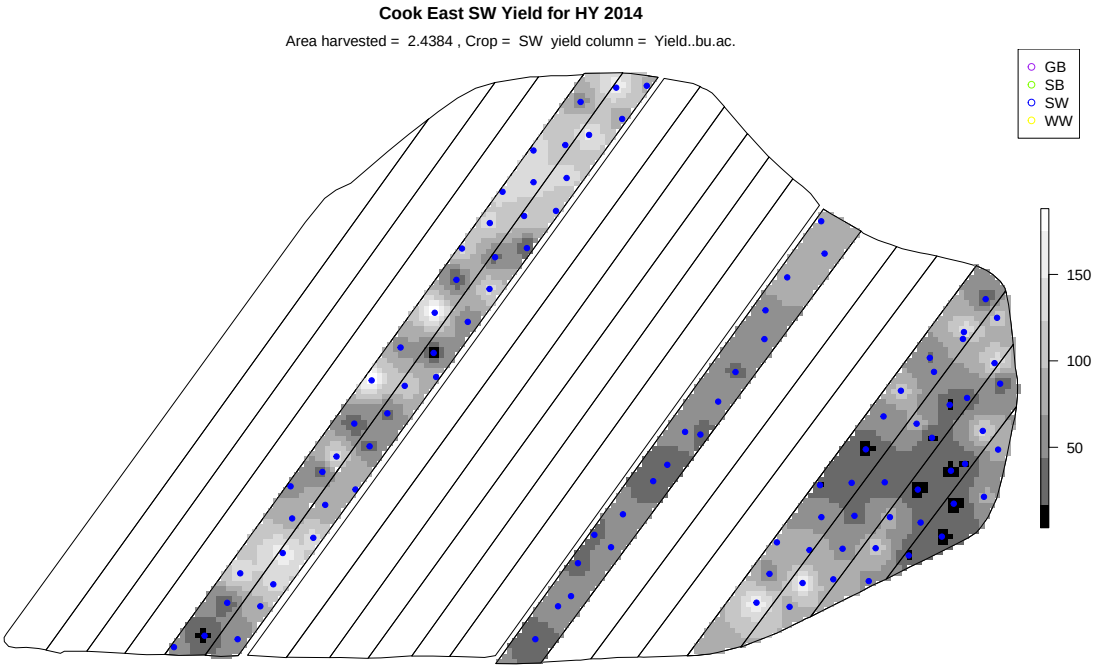
```
## [inverse distance weighted interpolation]
```



SW

```
map_yield(d2014, "Yield..bu.ac.", georef.only,
          extract_georef_field_and_strip(c(5,6), NULL, c(1,5,6,7,8), georef.only),
          harvest.year, "SW")
```

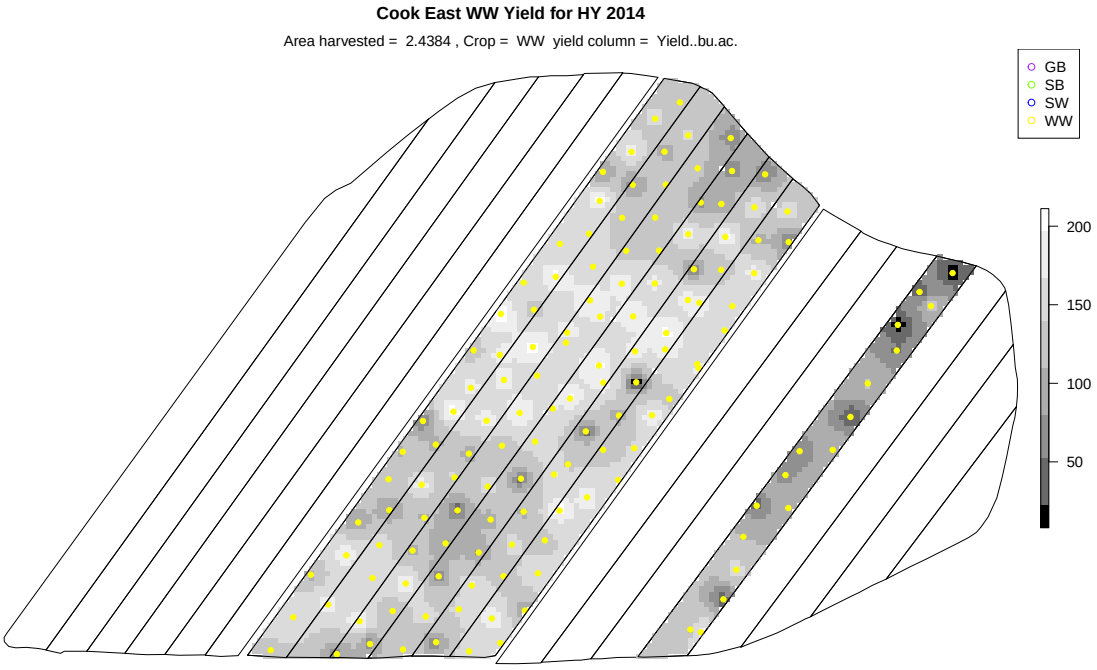
```
## [inverse distance weighted interpolation]
```



WW

```
map_yield(d2014, "Yield..bu.ac.", georef.only,
          extract_georef_field_and_strip(NULL, c(1, 2, 3, 4, 5, 6), c(4), georef.only),
          harvest.year, "WW")
```

```
## [inverse distance weighted interpolation]
```



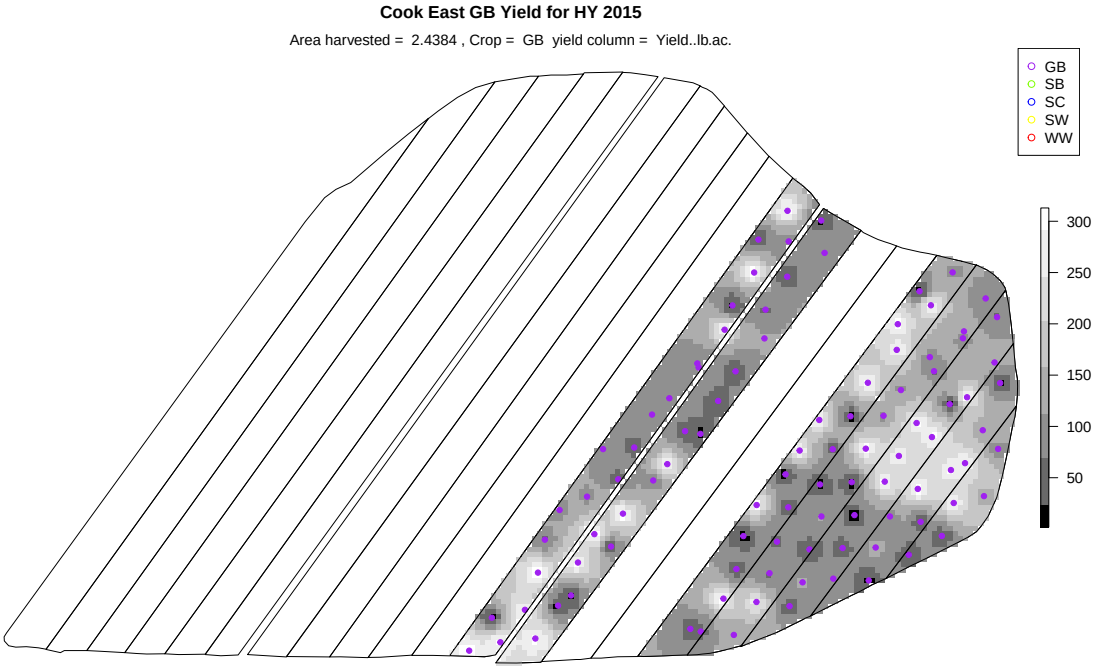
2015

```
# Read input data and print summary
harvest.year <- 2015
d2015 <- yields[yields$HarvestYear == harvest.year,]
#summary(d2015)
```

GB

```
#summary(d2015[d2015$Crop == "GB", ])
map_yield(d2015, "Yield..lb.ac.", georef.only,
          extract_georef_field_and_strip(NULL, c(6), c(1,4,5,6,7,8), georef.only),
          harvest.year, "GB")
```

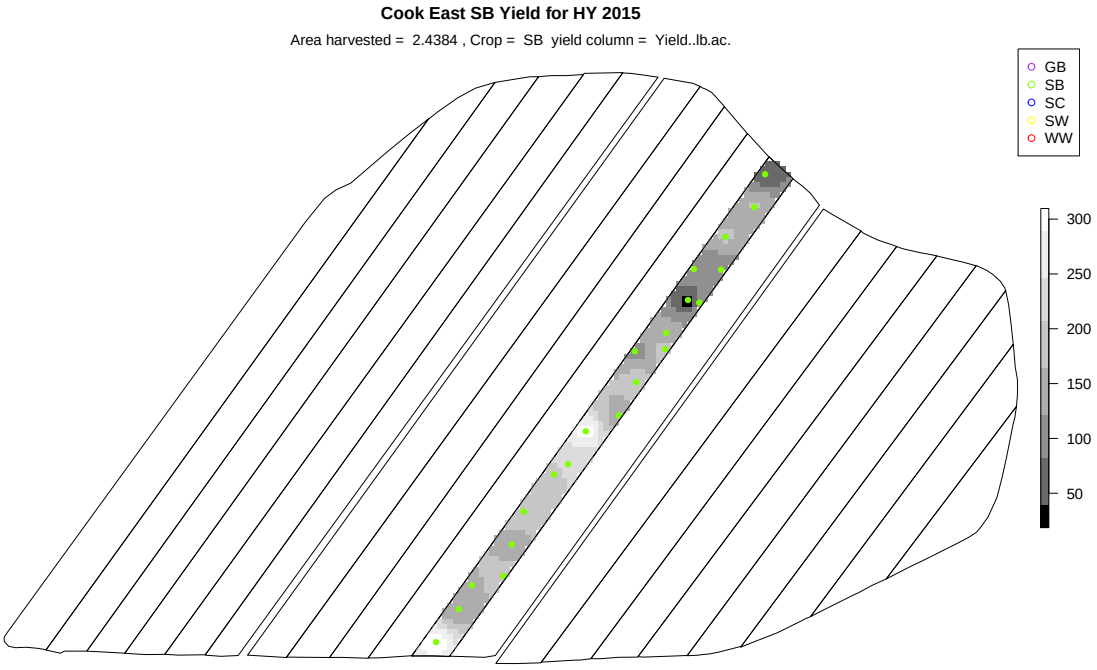
```
## [inverse distance weighted interpolation]
```



SB

```
#summary(d2015[d2015$Crop == "SB", ])
map_yield(d2015, "Yield..lb.ac.", georef.only,
          extract_georef_field_and_strip(NULL, c(5), NULL, georef.only),
          harvest.year, "SB")
```

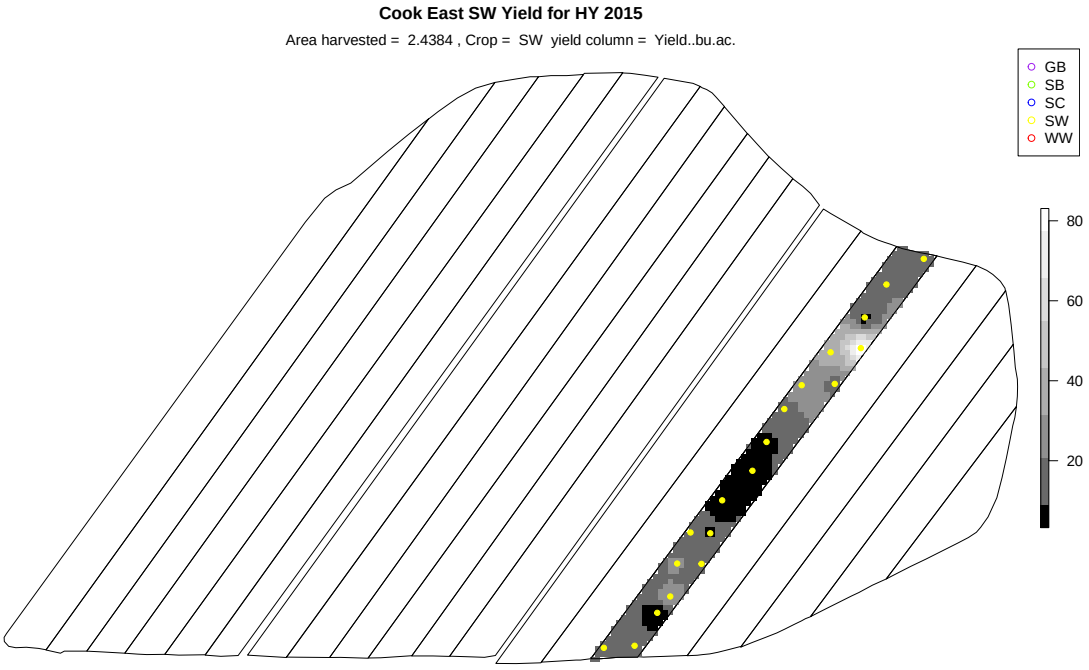
```
## [inverse distance weighted interpolation]
```



SW

```
#summary(d2015[d2015$Crop == "SW", ])
map_yield(d2015, "Yield..bu.ac.", georef.only,
          extract_georef_field_and_strip(NULL, NULL, c(3), georef.only),
          harvest.year, "SW")
```

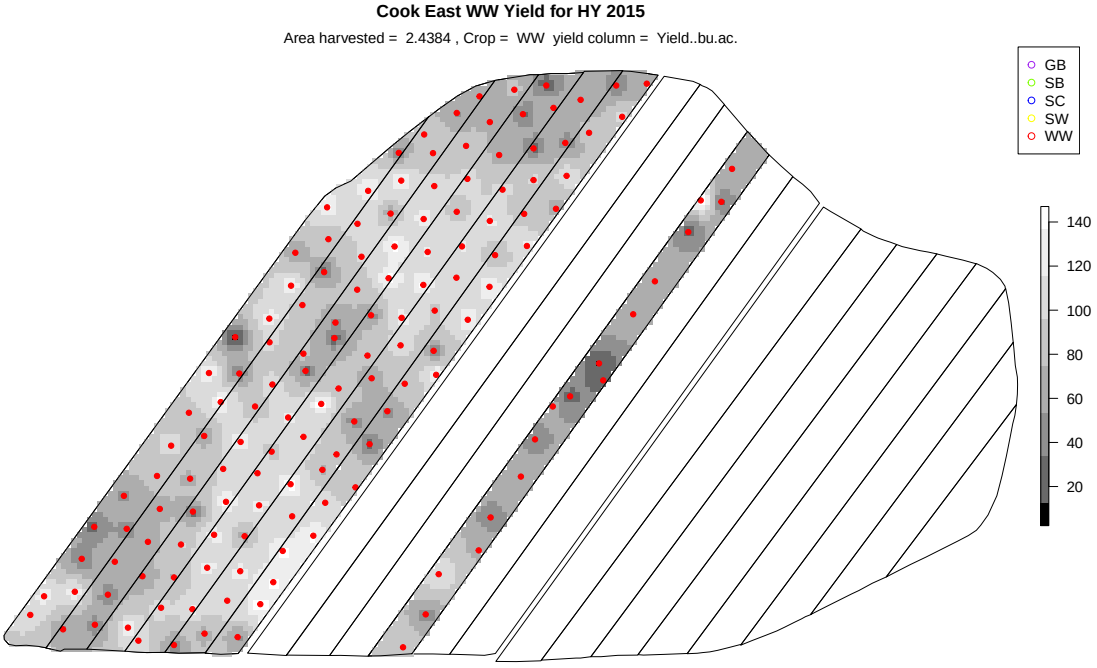
```
## [inverse distance weighted interpolation]
```



WW

```
#summary(d2015[d2015$Crop == "WW", ])
map_yield(d2015, "Yield..bu.ac.", georef.only,
          extract_georef_field_and_strip(c(1,2,3,4,5,6), c(4), NULL, georef.only),
          harvest.year, "WW")
```

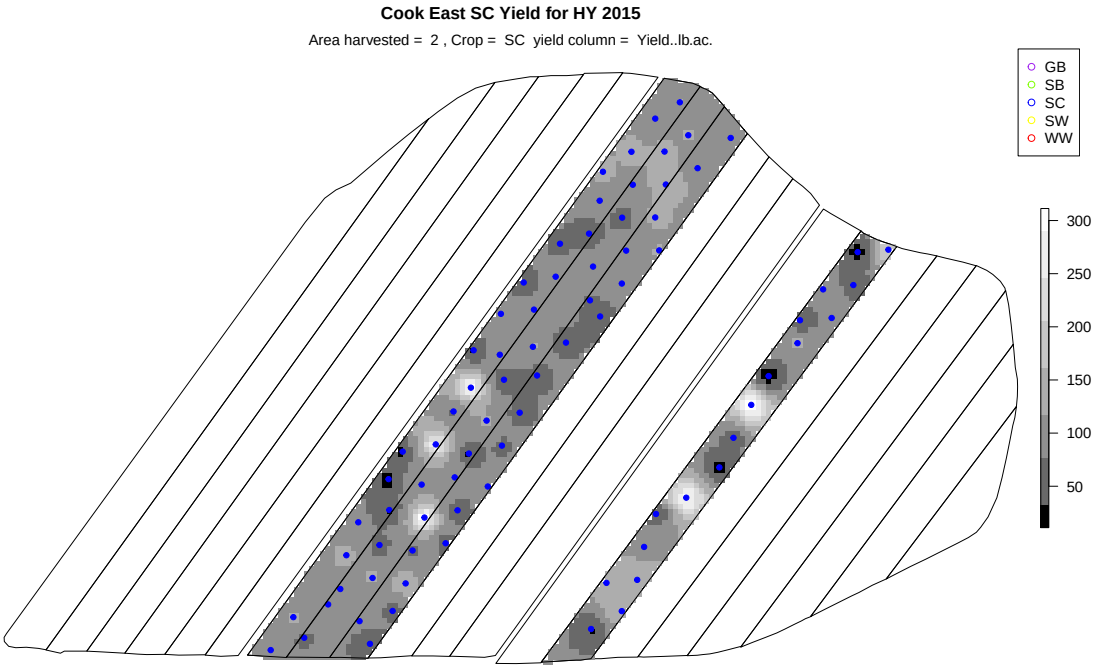
```
## [inverse distance weighted interpolation]
```



SC

```
#summary(d2015[d2015$Crop == "SC", ])
map_yield(d2015, "Yield..lb.ac.", georef.only,
          extract_georef_field_and_strip(NULL, c(1,2,3), c(2), georef.only),
          harvest.year, "SC")
```

```
## [inverse distance weighted interpolation]
```



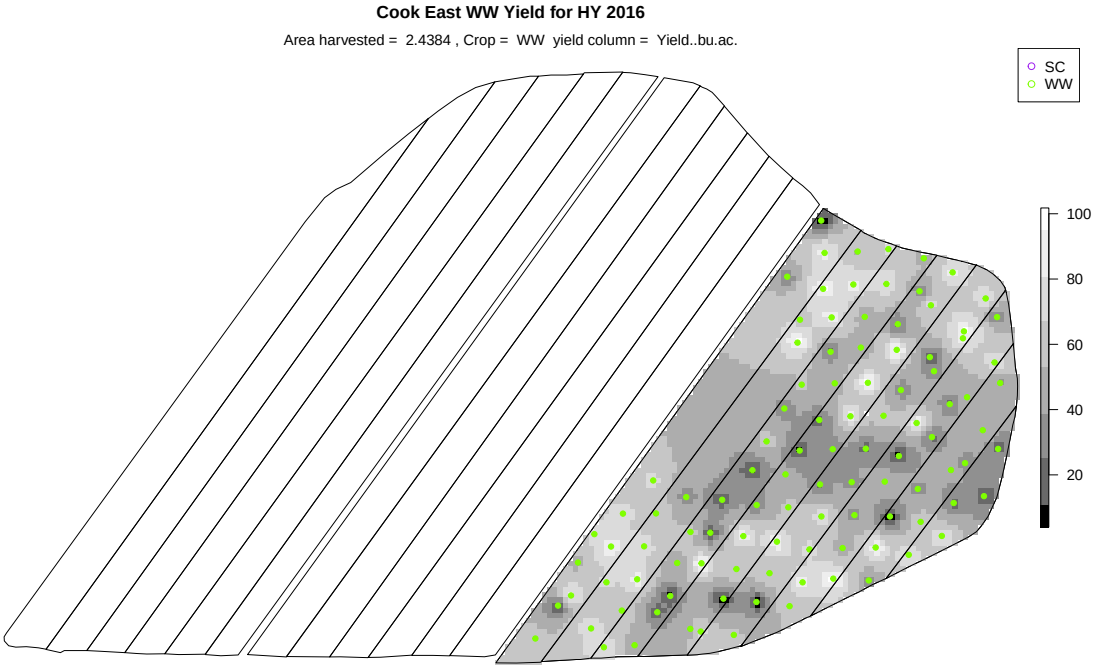
2016

```
# Read input data and print summary
harvest.year <- 2016
d2016 <- yields[yields$HarvestYear == harvest.year,]
#summary(d2016)
```

WW

```
#summary(d2016[d2016$Crop == "WW", ])
map_yield(d2016, "Yield..bu.ac.", georef.only,
          extract_georef_field_and_strip(NULL, NULL, c(1,2,3,4,5,6,7,8), georef.only),
          harvest.year, "WW")
```

```
## [inverse distance weighted interpolation]
```



SC

```
#summary(d2016[d2016$Crop == "SC", ])
map_yield(d2016, "Yield..lb.ac.", georef.only,
          extract_georef_field_and_strip(c(1,2,3,4,5,6), c(1,2,3,4,5,6), c(1, 2), georef.only),
          harvest.year, "SC")
```

```
## [inverse distance weighted interpolation]
```