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Map biodiversity records with rgbif and ggmap packages in R

July 23, 2012
By vijaybarve

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(This article was first published on **Vijay Barve**, and kindly contributed to R-bloggers)

When I attended usrR! 2012 last month, there was an interesting presentation by Dr. David Kahle about the package ggmap. It is a package built over ggmap2 and helps us map spatial data over online maps like Google maps or Open Street Maps. I decided to give ggmap package a try with biodiversity data.

So first let us create a map for the Plain Tiger or the African Monarch Butterfly (*Danaus chrysippus).* We use **occurrencelist** from rgbif package again like previous post.

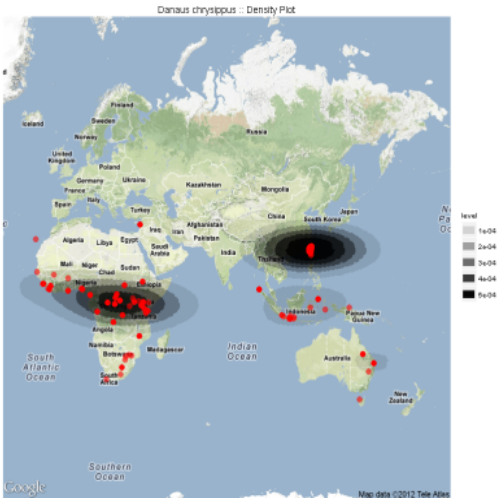
We use qmap function from ggmap package to quickly pull up the base map from Google Maps. So in essence the **qmap** function eliminates two step process of getting map data using **map_data** function and then setting up map display using **ggplot** function into one step. We use **geom_jitter** function to plot the occurrence points in the specified size(**size = 4**) and color(**color = "red"**).

```
library(rgbif)
Dan_chr=occurrencelist(sciname = 'Danaus chr
                       coordinatestatus = TR
                       maxresults = 1000,
                       latlongdf = TRUE, rem
library(ggmap)
library(ggplot2)
wmap1 = qmap('India',zoom=2)
wmap1 +
      geom_jitter(data = Dan_chr,
                  aes(decimalLongitude, deci
                  alpha=0.6, size = 4, color
                    opts(title = "Danaus chr
```

Here is the opuput map of the code snippet:

Though in earlier code we have used geom_jitter, high density of the points in some regions are not clearly seen. If we want to get better idea about the number of points we can try two dimensional density maps using the **stat_density2d** function. It just adds density lines on the map showing higher density with darker circles.

```
library(rgbif)
Dan_chr=occurrencelist(sciname = 'Danaus chr
                       coordinatestatus = TR
                       maxresults = 1000,
                       latlongdf = TRUE, rem
library(ggmap)
library(ggplot2)
wmap1 = qmap('India',zoom=2)
wmap1 +
  stat_density2d(aes(x = decimalLongitude, y
                     fill = ..level.., alpha
                   size = 4, bins = 6,
                   data = Dan_chr, geom = 'lin
      geom_jitter(data = Dan_chr,
                  aes(decimalLongitude, deci
                  alpha=0.6, size = 4, color
                    opts(title = "Danaus chr
```



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Vijay Barve.

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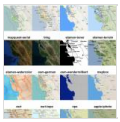

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