

Using Leaflet and htmlwidgets in a Hugo blog post

USGS Office of Water Information



We are excited to use many of the JavaScript data visualizations in R using the `htmlwidgets` package in future blog posts. Having decided on using Hugo, one of our first tasks was to figure out a fairly straightforward way to incorporate these widgets. This post describes the basic process to get a basic leaflet map in our Hugo-generated blog post.

In this example, we are looking for phosphorus measured throughout Wisconsin with the `dataRetrieval` package. Using `dplyr`, we filter the data to sites that have records longer than 15 years, and more than 50 measurements.

```
library(dataRetrieval) pCode <- c("00665") phos.wi <- readNWISdata(stateCd="WI", parameterCd=pCode, service="site",
seriesCatalogOutput=TRUE) library(dplyr) phos.wi <- filter(phos.wi, parm_cd %in% pCode) %>% filter(count_nu > 50) %>%
mutate(period = as.Date(end_date) - as.Date(begin_date)) %>% filter(period > 15*365)
```

Plot the sites on a map:

```
library(leaflet) leafMap <- leaflet(data=phos.wi) %>% addProviderTiles("CartoDB.Positron") %>%
addCircleMarkers(~dec_long_va,~dec_lat_va, color = "red", radius=3, stroke=FALSE, fillOpacity = 0.8, opacity = 0.8,
popup=~station_nm)
```

Next, we use the `htmlwidgets` package to save a self-contained html file. The following code could be generally hid from the reader using `echo=FALSE`.

```
library(htmlwidgets) library(htmltools) currentWD <- getwd() dir.create("static/leaflet", showWarnings = FALSE)
setwd("static/leaflet") saveWidget(leafMap, "leafMap.html") setwd(currentWD)
```

The html that was saved with the `saveWidget` function can be called with the `iframe` html tag.

```
<iframe seamless src="/static/leaflet/leafMap/index.html" width="100%" height="500"></iframe>
```

When building the site, Hugo converts the “leafMap.html” to “leafMap/index.html”.

One issue for our Hugo theme was that the created widget page is included in the overall blog index. This was fixed by adding a line to the overall `index.html` layout page to only list pages with dates above Jan. 1, 1970 (so really, any legitimate date):

```
{{ if ge $value.Date.Unix 0 }} <div class="col-sm-4"> {{ .Render "grid" }} </div> {{ end }}
```

A screenshot of the map was taken to use for the thumbnail in the blog index.

Questions

Please direct any questions or comments on `dataRetrieval` to: <https://github.com/USGS-R/dataRetrieval/issues>
