Mapping Tools: Leaflet and My Maps

Alan Ochoa Rodriguez  Integrated Report Coordinator
Utah Division of Water Quality
Usage Overview

Leaflet - R Package

- Integrated Report - site validations during assessments
- Publicly display Integrated Report results

Google My Maps

- Inform public on Harmful Algal Bloom and Waterborne Pathogens advisories
Google My Maps
HABs and Waterborne Pathogens Advisories

MyMaps
- Web based interactive mapping tool
- Customize points, lines and shapes
- Easy for public to use

habs.utah.gov
Google My Maps

- Waterbody/Advisory details
- Create quickly
- Map manually updated on daily basis
Site Validations:

Leaflet & Shiny

Leaflet R Package
- Customize map - Layers, shapefiles, basemaps
- Overlay data

Shiny R Package
- Create interactive web applications
- Respond to user input
- Build dashboards, visualize, explore and interact with data
Internal App for Site Validations

- Import csv file that with flagged sites
- uses Leaflet to visualize site data flags
siteValApp - Filtering

- Prepped the data with flags
- Simplified Data Exploration
  - minimize data
  - focus on relevant parameters
  - focus on specific areas of interest
Leaflet/Shiny - Filtering

- Prepped data were run through R function that flagged sites based on attribute/spatial/duplicate checks
- Flag reasons
- Customize filtering columns
- Dynamically changes filtering options
- Compare different subsets
Leaflet: Features

- Basemaps
- Layers
- Visualizing unique scenarios
Shiny and Leaflet: Updating Tables
Leaflet - Publicly Display Integrated Report Results

- Static public map
- Filters
- Sharing results
- Easily updated
- Visualizing results

https://deq.utah.gov/water-quality/most-recent-approved-integrated-report
Challenges & Lessons Learned

My Maps
- Created quickly
- Intuitive design
- Limited to points, and lines
- No filtering
- Smaller datasets
- Manually updated
- Great for simple static maps

Leaflet
- Pairing with other R tools/Packages
- Filtering data
- Large amounts of data
- Open source/plenty of resources
- Longer development time
- R Knowledge
Thank you

Alan Ochoa
Environmental Scientist

EMAIL
aochoa@utah.gov