Marine Sensitivity Tech Docs

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# Preface

This is a Quarto book.

To learn more about Quarto books visit <https://quarto.org/docs/books>.

# 1. Introduction

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| Figure 1.1: Diagram of data preparation for generating marine species sensitivities. |

|  |
| --- |
| Figure 1.2: Overview of process. |

The raster of sensitivity () contains cells representing a sum across species () of presence () multiplied by the sensitivity weight () ([Equation 1.1](#eq-cells-sens)).

# 2. Server

The server is for serving up any web services outside those of Github (e.g., [website](https://marinesensitivity.org/), [docs](https://marinesensitivity.org/docs) and R package [msens](https://marinesensitivity.org/msens)) using [Docker](https://www.docker.com/) (see the [docker-compose.yml](https://github.com/MarineSensitivity/server/blob/main/docker-compose.yml); with reverse proxying from subdomains to ports by [Caddy](https://caddyserver.com)).

## 2.1 Setup

For instructions on launching an Amazon instance and installing the server software, see [Server Setup · MarineSensitivity/server Wiki](https://github.com/MarineSensitivity/server/wiki/Server-Setup).

## 2.2 Services

The server is running the following services:

* [**rstudio**](https://rstudio.marinesensitivity.org)  
  *integrated development environment (IDE) to code and debug directly on the server*   
  [More info..](https://posit.co/products/open-source/rstudio-server/)
* **shiny**  
  *interactive applications*  
  e.g., [**shiny**.marinesensitivity.org/**map**](https://shiny.marinesensitivity.org/map)  
    
  [More info..](https://shiny.posit.co/)
* [**pgadmin**](https://pgadmin.marinesensitivity.org)  
  *PostGreSQL database administration interface*  
    
  [More info..](https://www.pgadmin.org/)
* [**api**](https://api.marinesensitivity.org)  
  *custom API: using R plumber*  
    
  [More info..](https://www.rplumber.io/)
* [**swagger**](https://swagger.marinesensitivity.org)  
  *generic database API: using PostGREST*  
    
  [More info..](https://postgrest.org/en/stable/)
* [**tile**](https://tile.marinesensitivity.org)  
  *spatial database API: using pg\_tileserv for serving vector tiles*  
    
  [More info..](https://postgrest.org/en/stable/)

# 3. Workflows

librarian::shelf(  
 dplyr, gh, glue, knitr, tidyjson,  
 quiet = T)  
# renv::dependencies(); renv::snapshot()  
library(dplyr); library(gh); library(glue); library(knitr); library(tidyjson)  
  
org <- "MarineSensitivity"

## 3.1 Get Descriptions

gh(glue("GET /orgs/{org}/repos")) |>   
 spread\_all() |>   
 as\_tibble() |>   
 select(name, description) |>  
 arrange(name) |>   
 kable()

| name | description |
| --- | --- |
| MarineSensitivity.github.io | default website |
| api | application programming interface (API) using R Plumber package |
| apps | Shiny applications |
| docs | documentation for BOEM’s offshore environmental sensitivity index products |
| manuscripts | Manuscripts with review of sensitivities by industry and receptors (species, habitats, human uses) |
| msens | R library of functions for mapping marine sensitivities, sponsored by BOEM |
| objectives | repository for issues spanning multiple repositories and doing big picture roadmapping |
| server | server setup for R Shiny apps, RStudio IDE, R Plumber API, PostGIS database, pg\_tileserv |
| workflows | scripts for testing data analytics and visualization as well as production workflows |

# 4. Libraries

or maybe later Python module

# 5. API

There are actually three APIs, each used for different purposes:

1. [**api**](https://api.marinesensitivity.org)  
   *custom API: using R* [*plumber*](https://www.rplumber.io/)  
   source: [MarineSensitivity/api](https://github.com/MarineSensitivity/api/blob/main/plumber.R)
2. [**swagger**](https://swagger.marinesensitivity.org)  
   *generic database API: using* [*PostGREST*](https://postgrest.org/en/stable/)  
   source: Postgres database, non-spatial
3. [**tile**](https://tile.marinesensitivity.org)  
   *spatial database API: using* [*pg\_tileserv*](https://postgrest.org/en/stable/) *for serving vector tiles*  
   source: Postgres database, spatial

# 6. Apps

# 7. Docs

# 8. Summary

In summary, this book has no content whatsoever.

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# References