**README**

Steps to replicate the analysis in ‘Celestial Rhythms and Environmental Variables Drive Temporal Patterns in a Coral Reef Soundscape’ (2025), use the scripts (indicated in italics) following the steps below.

1. **In Python, calculate indices:**
   1. Following the analysis by Williams *et al.* (2024)
2. **In R prepare the indices and current data for analysis:**

*Prepare\_indices\_kimbe\_island.R*

*Prepare\_currentdata\_kimbe\_island.R*

1. **Use GAM models for high- and low- frequency sound and then plot:**

*GAM\_Lfreq\_M.Rmd*

*GAM\_Hfreq\_M.Rmd*

1. **Finally, plot the raw data:**

*Raw\_Data\_Plot.Rmd*