- The table below outlines the scripts used to complete the analysis of, "Linking aquatic vegetation structure with ecosystem metabolism throughout the Klamath River, California, USA". The available data and scripts begin with the cleaned dissolved oxygen data, excluding Tribally held Sonde data, which is available from the Karuk and Yurok Tribes at their discretion.
- Scripts were checked and last run on 18 Oct 2024, with the exception of the metabolism models, which take too long to run to justify a casual re-check.
- Raw data in the LongProfiles folder is from Yurok Tribe 2020 and Bradley 2021, and the flow_interp.csv file was modeled from a script adapted from Perry et al. 2019. All other data is original data collected by the authors.
- The file, "daily_predictions.tsv are subset from Savoy et al. 2019, but excluded from GitHub due to large file size.
- For questions about the data or scripts, contact Laurel Genzoli; laurel.genzoli@gmail.com

Script Name	Description	Relies on	Data out
01_run_Metab.R	Runs streamMetabolizer on 11 sites. Tribal DO data is excluded in raw data, and data output RDA files are not included due to size.	oxy_20210212_with_EvenTS_03.csv *Tribal DO data is removed from this file*	RDA files, which are too large to include.
02_Extract_Metab_Data.R	This script extracts the metabolism data used in this analysis from the RDA files.	RDA files from prior script	.csv and .rda files of metabolism parameters (in folders named as such)
03_biomass_scale.Rmd	This script combines field estimates of vegetation cover with samples collected for AFDM and creates scaling relationships to convert cover to biomass based on vegetation cover, type, and thickness.	Biomass_raw/2019_Veg_Biomass.csv Biomass_raw/2020_Veg_Biomass.csv Biomass_raw/2019_Rock_Biomass.csv Biomass_raw/plants_2019_full.csv	Final_data/bm_final_out.csv
04_Metab_Out.Rmd	This script prepares the metabolism data frame; calculates mean reach depth, scales metab to depth, explores reach lengths, assess the metab output, and builds site characteristics table and an SI plot.	Klamath_veg_date.csv Klamath_veg_depths.csv flow_interp.csv bm_final_out.csv final_metab_params (folder of files) final_metab_rda (folder of files) LongProfiles/z_site_intercept_out.csv	LongProfiles/r_curves_out.csv Final_data/Metab_for_hGAMs.csv
05_depth_model.R	Calculate slope and intercept for flow-mean depth model for each site. Bob did this is a separate script; need to run mid way through 03_Metab_Out.Rmd	LongProfiles/r_curves_out.csv	LongProfiles/ z_site_intercept_out.csv
06_HGAM_Stats.Rmd	This script runs the HGAM model on the metabolism and extracts the summer metabolism stats. Two outputs include a daily metabolism df with metabolism from streamMetabolizer and the smoothed HGAM in one file and summary stats in another.	final_data/bm_final_out.csv final_data/Metab_for_hGAMs.csv	final_data/metab_sum.csv final_data/metab_hgam.csv
07_Metab_PUB_figures	File produces the final figures. 3 of 4 figures require lay-out post processing in inkscape.	final_data/metab_hgam.csv final_data/bm_final_out.csv final_data/metab_sum.csv final_data/daily_predictions.tsv	Figures!

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