READ_ME for MSBio_litterbag_ms branch of MIMICS_STODE

Description: These R files are for running code to generate outputs associated with Rocci et al., XXXX. Please see the associated publication for clarification.

File structure:

- Functions directory
    - MC_parameterization
        - MIMICS_LitBag_repeat.R: used by MIMICS_LitBag_MC_parameterization_run.R (in Example_simulations directory) to apply random parameters and loop them through the MIMICS model
        - Set_parameter_defaults.R: sets default parameters to be used in calibration
    - Calc_Tpars.R: calculates parameters applied in MIMICS base function (RXEQ.R)
    - MIMICS_calc_steady_state_pools.R: uses steady state solver to calculate steady state for given MIMICS inputs
    - MIMICS_sim_litterbag.R: runs litterbag simulation of MIMICS; used by calibration scripts and uses MIMICS_calc_steady_state_pools.R
    - RXEQ.R: baseline MIMICS function that updates pools and fluxes
- Example_simulations directory
    - MIMICS_LitBag_MC_parameterization_run.R: code for initiating Monte Carlo calibration of litterbag version of MIMICS model
    - MSBio_LitBag_Runs.R: Runs litterbag simulations for default and calibrated models; used for choosing parameter sets that best match empirical data and comparing final parameter sets to empirical data
    - MSBio_LitBag_FutureRuns.R: Runs litterbag simulations for default and calibrated models under climate change using SSP 3-7.0 output
    - MSBio_LitBag_Runs_Validation.R: Runs litterbag simulations for default and calibrated models at validation sites
    - Data
        - XXXX_SSP370_anomalies.csv: daily input data for climate change runs for a given site where “XXXX” is a four letter site code
        - XXXX_clim.csv: daily input data for historical runs for a given site where “XXXX” is a four letter site code
        - DailyInput.csv: daily input data for all sites to run litterbag simulation in MSBio_LitBag_Runs.R; also created in that R file
        - DailyInput_validation.csv: daily input data for all sites to run litterbag simulation in MSBio_LitBag_Runs_Validation.R; also created in that R file
        - Litter_decomp_all.csv: empirical data for comparing model output to
        - NEON_GPP.csv: National Ecological Observatory Network (NEON) Gross Primary Productivity (GPP) data used for correcting anomalously high TALL Net Primary Productivity (NPP) data
        - Site_annual_clim_final.csv: annual means and sums of climate data for all sites to calculate steady state pools for this study

        - Site_annual_clim_validation.csv: annual means and sums of climate data for validation sites to calculate steady state pools for this study
        - MicFG_soil.csv: Empirical data from litterbag study used in this study
- Parameters
    - MIMICS_parameters_sandbox_20231129.R: list of parameters used in MIMICS
- Analysis
    - MIMICS_LitBag_MC_Analysis.R: analyzes monte carlo parameterization output
- MSBio_empirical_analysis.R: analyzes empirical data to get effect sizes used in calibration