The ‘Fuels\_Model’ folder contains code that:

1. Runs the Fuels Model described in Ensley-Field et al 2021

(Eq 1)

(Eq 2)

1. Runs predictive posterior check version of the model
2. Runs sensitivity analysis using different mean and standard deviations on all priors as well as the initial condition uncertainty term (sig\_f)
3. Produces trace plots and prints mean, sd, and rhat scores of parameter posterior distributions
4. Calculates and shows covariance between output posterior distributions
5. Calculates 95% Confidence interval of overall uncertainty, as
6. Plots results of sensitivity analysis: plots (1) confidence intervals of resulting posterior distributions on the y axis as each parameter’s prior’s mean and standard deviation are changed one at a time on the x axis and (2) changes in uncertainty resulting from each parameter as parameter’s priors are changed
7. Checks parameter’s are retrieved on dataset simulated to match actual results
8. Checks for what range of ovbservation error the model correctly retrieves an carryover(alpha) value higher than our results and it’s prior. Checks for what range of observation error the model correctly retrieves an conversion (beta) value lower than our results and it’s prior
9. Shows a simulation of our thought process on starting the model’s first latent fuel load for each location from a normal distribution of the previous year’s productivify value on the standardized scale, with a standard deviation of 0.8
10. Shows a linear regression of raw data, log-transformed data, deviations from long-term mean data, and standardized per location data