library(tidyverse) library(lubridate) ## Main script for phenology analysis

Load required functions

if(file.exists("01_download_phenocam.R")) source("01_download_phenocam.R") if(file.exists("02_plot_phenocam.R")) source("02_plot_phenocam.R") if(file.exists("03_logistic.R")) source("03_logistic.R")

Download phenology data

URL <- "http://phenocam.sr.unh.edu/data/archive/uiefprairie/ROI/uiefprairie_GR_1000_1day.csv" prairie_pheno <- download_phenocam(URL)

Plot overall phenology data

plot_phenocam(prairie_pheno)

Create and visualize subset of data for leaf out

spring <- as_date(c("2015-01-01","2015-06-01")) dat <- prairie_pheno %>% filter(date > spring[1], date < spring[2]) %>% select(date, gcc_mean, gcc_std)

plot_phenocam(dat)

Fit logistic model

dat <- dat %>% mutate(doy = yday(date)) par <- c(0.33,0.11,-10,0.1) fit_pars <- fit_logistic(dat, par) pred <- tibble(date = dat$date, pred = pred_logistic(fit_pars, dat$doy))

Visualize model and data

plot_phenocam(dat, pred = pred)