*Date of study*
Started in 2019, ongoing

*Date of Public Archiving:*
TBD -- need to review with growers if we can publish

*Last modified*:
June 22nd 2022

**Update 30 Nov 2023: Lizzie here, I am moving this to `NotCompleted_butArchived' folder as the project wrapped up in 2022 without further funding.**

*Goal*
Build phenological models from budbreak (and thus dormancy) to sugar maturity for winegrapes in BC Okanagan region using data provided by growers.

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Note, see bcvin_labdata document for details on files relating to our phenology and brix data and analysis

*General Files*

| File | Where | What |
|---|---|---|
| climateDataCanada.pdf | Github: notes | Notes from a meeting Faith went to about climate data resources in BC |
| | | |

*Data and Code*

Give info on how to track down all locations given in table below (even if link fails). Two good examples given below -- delete these for your file!

**Github** https://github.com/lizzieinvancouver/bcvin

| File | Where | What |
|------|-------|------|
| | | |

## Data From Okanagan Growers

| File | Where | What |
|------|-------|------|
| `_README.txt` | Github: data | Instructions on how to clean the data provided by growers |
| `2018 Phenological Data.xlsx` | Github: data/arterra | Phenology data from Arterra (2000-2018) |
| `2001-2019 Vintage Brix Data.xlsx` | Github: data/arterra | Brix data from Arterra (2001-2019) |
| `ArteraVineyardsinfo.csv` | Github: data/arterra | Information on Artera vineyard layout and block info. Information was taken from Artera vineyard maps. |
| `Artera Vineyard maps folder` | Github: data/arterra/maps | Vineyard maps for McIntyre, NkMipCellars, DarkHorse and Whitetail sites, as well as Inniskillin and Inkameep. Maps contain information on block layout. |
| `ArterraMaps_readME` | Github: data/arterra/maps | Readme file containing info we were given by Artera when they sent the maps. |
| `_datarequests folder` | Github: data/_datarequests | Various email layouts and files relating to asking people for phenology data |
| `Vineyardmaps folder` | Github: data/quailsgate/vineyardmaps | Maps of the Quail's Gate vineyards showing blocks and varieties. As PDFs |
| `qg_phenology2017_2019.csv` | Github: data/quailsgate/nektar | Quails Gate Phenology data (2017-2019) pulled from Nektar |
| `Phenological Data Report 2012 -` | Github: data/quailsgate | Phenology data (2012-2016) from Quails Gate |

| `2016.xlsx` | | |
|---|---|---|
| `Quails Gate brix data` | Github: data/quailsgate | Various brix files in quailsgate folder and 2019_May23 folder |
| `Climatedata folder` | Github: data/quailsgate/climatedata | Temperature, precipitation and GDD data from Quail's Gate Vineyard (years varying) |
| `qg_phenology2017_19.cs v` | Github:data/quailsgate/nektar | Phenology data from Quail's Gate pulled from Quail's Gate records on www.mynektar.com for 2017-2019. Instructions on how it was found is in the corresponding _README file |
| `2017 Pre-Harvest Grape Analysis.xlsx and 2013 Pre-Harvest Grape Analysis.xlsx` | Github: data/historicalbrixdata | 2017 and 2018 brix data from Quails Gate |
| `PHENOLOGICAL DATA.xls` | Github: data/quailsgate | Phenology data provided by Quail's Gate for years 2001 to 2012. Includes some extra info like bunch weight. |
| `Phenological Data Report 2012 - 2016.pdf and Phenological Data Report 2012 - 2016.xlsx` | Github: data/quailsgate | Phenology data for 2012-1016 in the pdf form it was given to us and an excel version. |
| `VITICULTURE SUMMARY.xls` | Github: data/quailsgate | A large spreadsheet with lots of information on the vines planted by Quailsgate. See ViticultureSummaryExplinationFJ.txt |
| `Viticulture Summary History (up to 2008).xls` | Github: data/quailsgate | More historical information on viticultural stuff like pick dates, bunch weights etc. |
| `Sebastian Farms Phenology Data.xlsx` | Github: data/sebastianfarms | Phenology data from Sebastian Farms (2010 - Summer 2019) |
| `Sebastain Farms Brix datasheets` | Github: data/sebastianfarms/brix | A folder of all brix data from Sebastian Farms |

| Sebastian Farms Climate Data.xlsx | Github: data/sebastianfarms | Climate data from Sebastian Farms |
|---|---|---|
| Sebastain Farms codes used to specify varieties, blocks and sites | Github/data/sebastianfarms/codes | A folder containing information on how to translate the vineyard codes used by Seb Farms into variety/block/site information. |
| gdd_notes.txt | Github: notes | Information on what temperature different growers use to estimate GDD |
| VineyardLocations.csv | Github: data | Locations of Arterra sites that we either figured out the location using a shapefile provided by Pat, or we got from Tamara who used to work for Arterra. |
| soilMaps folder | Github: data | Soil Maps we got from Pat and Carl. Also a csv with teh soil types of each block we monitor in our own phenological monitoring field wok |
| | | |

## Climate data

| File | Where | What |
|---|---|---|
| *Environmentcanada* folder | Github: data/environmentcanada | Penticton agCanada station weather data from 2001 to 2018 as csv files for each year. |
| *Geospatial* folder | Github: data/geospatial | Contains a map and shape files from Pat Bowen and a raster from Tongli Wong generated from shape files |
| *historicalClimateDataClean* folder | Github: analyses/output/ | Csv files of cleaned Environment Canada data for Kelowna, Osooos, Penticton and Summerland weather stations. Some NA gaps |

| File | Where | What |
|---|---|---|
| | | remain. Downloaded and cleaned by Dinara. |
| *DaymetData.csv* | Github: analyses/output/ | Climate data from Daymet data for Arterra sites we have historical data for. See analyses/cleaning/daymet_batch_python/daymet_multiple_extraction.py for download code |
| | | |

## Clean data

| File | Where | What |
|---|---|---|
| phenologyHistorical.csv | Github: /analyses/output | Cleaned historical phenology data for all partner vineyard companies combined |
| ArterraClimateClean.csv | Github: /analyses/output | Cleaned Arterra climate data |
| brixHistorical.csv | Github: /analyses/output | Cleaned historical brix data for Arterra and Sebastian Farms locations. We don't have Quail's gate data. |

## Cleaning

| | | |
|---|---|---|
| arterra_brix_cleaning.R | Github: analyses/cleaning/arterra | Code written by Mira to clean the birx data from Artera |
| arterra_pheno_clean.csv | Github: analyses/output/arterra_clean | Cleaned phenology data from Arterra. From atrerra_pheno_merge.R |

| | | |
|---|---|---|
| `arterra_pheno_merge.R` | Github: [analyses/cleaning/arterra](#) | Cleaning arterra phenology data and merging into arterra_pheno_clean.csv |
| `Copied data files for cleaning` | Github: [analyses/cleaning/input/arterra](#) | Files copied from data folder for cleaning. Some have been altered by Mika for coding purposes. From the `Phenological Data.xlsx` file from Arterra. |
| `brix_arterra_cleaned.csv` | Github: [analyses/output/arterra_clean](#) | Cleaned Arterra brix data using arterra_brix_cleaningg.R |
| `env_canada_cleaning.R` | Github: [analyses/cleaning/environmentcanada](#) | Code that combines all the separate csv files for each year in data/environmentcanada. This data was used to help build phenology timing/wanga and Engel alternative models |
| `Phenologicaldata Folder` | Github: [analyses/input/quailsgate](#) | Phenology data from `PHENOLOGICAL DATA.xls` in the data folder, but split into separate csv for each sheet and copied to input folder. |
| `VineyardMapsDataCompiled.csv` | Github: [analyses/input/quailsgate](#) | Information on vineyard blocks, varieties, clones and rootstocks taken from the vineyard maps we were given by Quail's Gate |
| `qg_PhenoDataReport_2012-2016.csv` | Github: [analyses/input/quailsgate](#) | A working copy of `Phenological Data Report 2012 - 2016.xlsx` from the data folder |
| `qg_phenology2017_19COPY.csv` | Github: [analyses/input/quailsgate](#) | A working copy of `nektar/qg_phenology2017_19.csv` from the data folder |
| `qg_2017_PreHarvestGrapeAnalysis.csv` | Github: [analyses/input/quailsgate](#) | A working copy of `historicalBrixData/qg_2017_PreHarvestGrapeAnalysis.csv` from the data |

| | | folder |
|---|---|---|
| `clones_ed_MY.csv` | [analyses/input/quailsgate/viticulturesummary](analyses/input/quailsgate/viticulturesummary) | A list of clones used by Quail's gate that has been cleaned manually by MY |
| `quail17_cleaner.R` | Github: [analyses/cleaning/quailsgate](analyses/cleaning/quailsgate) | Code to clean Quails Gate phenology data for 2017, written by Mira. Eventually this will be combined into a general cleaning script for Quails Gate |
| `Quailgate cleaning notes.txt` | Github: [analyses/cleaning/quailsgate](analyses/cleaning/quailsgate) | Detailed notes written by Faith explaining to the best of her knowledge what is in each file provided by Quails Gate |
| `quailsgate_cleaning_phenology.R` | Github: [analyses/cleaning/quailsgate](analyses/cleaning/quailsgate) | R code cleaning quail's gate phenology data . |
| `quailsGatePhenology.csv.` | Github: [analyses/cleaning/quailsgate](analyses/cleaning/quailsgate) | Final file where clean phenology data from Quail's Gate goes. Not quite correct yet. |
| `SebFarms_PhenologyData.csv` | Github: [analyses/input/sebastianfarms](analyses/input/sebastianfarms) | A working copy of `Sebastian Farms Phenology Data.xlsx` from the data folder |
| `sebfarms_ClimateData.csv` | Github: [analyses/input/sebastianfarms](analyses/input/sebastianfarms) | A working copy of `Sebastian Farms Climate Data.xlsx` from the data folder |
| `Brix folder` | Github: [analyses/input/sebastianfarms](analyses/input/sebastianfarms) | Working copies of brix data from the data/sebastioanfarms/brix folder |
| `_README.txt` | Github: [analyses/cleaning/sebfarm_cleaning](analyses/cleaning/sebfarm_cleaning) | Details on what cleaning Pheobe did outside of R |
| `seb.pheno.cleaning.R` | Github: [analyses/cleaning/sebfarm_cleaning](analyses/cleaning/sebfarm_cleaning) | R script cleaning seb farms phenology data. Output is `seb_pheno_clean.csv` in the output folder |

| | | |
|---|---|---|
| `sebfarm_brix_clean...R` | Github:<br>[analyses/cleaning/sebfarm_cl<br>eaning](#) | A collection of cleaning scripts that clean each year of the Seb Farms brix data separately. By Mira. |
| `sebfarm_brix_complete.`<br>`R` | Github:<br>[analyses/cleaning/sebfarm_cl<br>eaning](#) | R script Sourcing all the `sebfarm_brix_clean...R` files to clean the Seb Farms brix data. Output is in `sebfarm_brix_complete.`<br>`csv` in the output folder. |
| `sebfarm_brix_complete.`<br>`csv` | Github:<br>[analyses/output/sebfarm_cle<br>an](#) | Claned Seb Farms brixdata |
| `seb_pheno_clean.csv` | Github:<br>[analyses/output/sebfarm_cle<br>an](#) | Cleaned Seb Farms Phenology data |
| `Climate_compare/inout`<br>`folder` | Github:<br>[analyses/climate_compare/in<br>put](#) | Arterra vineyards climate date |
| `Arterra folder` | Github:<br>[analyses/input/arterra](#) | Historical brix and phenology data from Arterra |

## Analyses

| | | |
|---|---|---|
| `Phenomodels folder` | [phenmodels](#) | Notes and various R and stan scripts from work with Micheal Betancourt on how to make a better version of the Wang and Engel phenological growth curve in Stan. Very much a work in progress. |
| `Climate_projections`<br>`folder` | Github:<br>[analyses/climate_projections](#) | This folder is home to all of the climate projection scripts and related info. This code was written by Adam Fong, and includes code to make climate maps for our website. See README.txt for more detail |

| | | |
|---|---|---|
| `vineyardnames.R` | Github: <u>analyses/misc</u> | Script that makes a list of the names of the vineyards we are focusing on with our Okanagan Analysis, output in `output/vineyardnames.csv` |
| `Project_budburst folder` | Github: <u>analyses/project_budburst</u> | R and stan code written by Geoff that analyses budburst and veraison of Arterra data to try and build good models. |
| `ArterraVsDaymet.R` | Github: <u>analyses/cimate_compare</u> | Fiel written by Dinara. This file is to create visualizations that would compare mean, min and max temp values of several vineyard sites for Arterra and Daymet data sources, |
| `climcomparequick.R` | Github: <u>analyses/cimate_compare</u> | ## Started 30 April 2022 ## ## By Lizzie ##<br><br>## Very quick plotting of climate data from Arterra |
| `years_of_max_diff_Arterra_Daymet.R` | Github: <u>analyses/cimate_compare</u> | # File finds the years in which the climate data recorded by Arterra was significantly # different from the one by Daymet # Started by Dinara, June 15 2022 |
| `historicalbrix_overview.R` | Github: <u>analyses/historicalbrix_overview</u> | Code by Hoai Huong exploring brix data from our partner companies |

*Notes*

Analyses/hardiness is also in the bcvin folder: These are data and results from Carl Bogdanoff of LT50 (lethal temperatures for 50% of tissue) of winegrape buds taken in the Okanagan across several years. They need their own Where Data Code Live file someday.