**Winegrape Projections**

*Date of study*

started summer 2015, published article in Feb 2020

*Public date of archive*

May 1st 2020

**Update 30 Nov 2023: Lizzie here, I am moving this to `Completed’ folder as I think we have done what we can pretty well. I am leaving all the notes below and (bottom) the last email exchange about how/if to post the projections.**

*Goal*

To generate projections of suitable winegrowing regions and predict suitability of varieties for growing in the future.

*Last modified*: 26 November 2020 (1 Dec 2024: Lizzie made a Google Drive comment below)

*Contributors*

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**See related article**: Morales-Castilla *et al.* 2020, [Diversity buffers winegrowing regions from climate change losses](https://www.pnas.org/content/117/6/2864.short?rss=1). Page 2 of the supplement includes links and references to Data availability for BEST (also shown below), winegrowing regions distributions (Anderson & Aryal 2015 and published as [doi:10.5063/F1SX6BH1](https://knb.ecoinformatics.org/view/doi%3A10.5063%2FF1SX6BH1)), phenological data (NEED TO ADD INFO BELOW).

*General Files*

|  |  |  |
| --- | --- | --- |
| **File** | **Where** | **What** |
| Overview | [Google Drive](https://docs.google.com/document/d/1_9YuLSc7evaYdklVzlNEIJ4YHIkqU1MBz_uWgWQuGc0/edit) -- Update 1 Dec 2024: this linked file is called ‘The future of wine’ and Lizzie is keeping a copy (The future of wine.pdf) on her computer. | Overview of project, general goals and analyses, authorship, etc. |

*Data and Code*

Github: [https://github.com/lizzieinvancouver/](https://github.com/lizzieinvancouver/buds/tree/master/analyses/data)vin/climatefuture

[https://github.com/MoralesCastilla/](https://github.com/MoralesCastilla/Pheno_projections)FutureWinegrapePhenology

<https://github.com/MoralesCastilla/PhenoDiversity>

W drive: WeldShare > Wolkovich Lab > Vitis

RC storing: /n/wolkovich\_lab/climatefuture/

/n/wolkovich\_lab/Lab/Nacho/

|  |  |  |
| --- | --- | --- |
| **File** | **Where** | **What** |
| Vassal phenology data | WeldShare < Wolkovich lab < Vitis < Vassal\_Phenology\_Records;  [Google Drive](https://docs.google.com/spreadsheets/d/1v_F2JZdqzamCMZE9ztbrGc7Jh_Koz5g6rs_3oH401Mk/edit#gid=0) | Raw phenology files/records; Phenology data compiled from Domaine de Vassal long term records |
| General circulation models | Research Computing: /n/wolkovich\_lab/climatefuture | Set of several different climate projections from 1950-2100 |
| brinparams.csv  wangengelparams.csv | [Github](https://github.com/lizzieinvancouver/buds/tree/master/analyses/data): analyses/input | Model parameters for phenology models of nine winegrapes; generated by Inaki |
| Winegrape\_vars\_2010\_KvL JV-1.xlsx | [Github](https://github.com/lizzieinvancouver/buds/tree/master/analyses/data): adelaide/analyses | File with high quality wine grape assessments |
| climate\_projections\_maps.R | [Github](https://github.com/lizzieinvancouver/vin/tree/master/climatefuture/analyses/WineRegions/winemaps): analyses/WineRegions/winemaps | R code to build wine regions map that we conduct our analyses across |
| .R files | [Github](https://github.com/lizzieinvancouver/vin/tree/master/climatefuture/analyses): climatefuture/analyses | R code to run analyses for climate projections |
| General circulation models  bias-corrected | Research Computing: /n/wolkovich\_lab/climatefuture/corrected\_GCMs | GCM climate projections from 1950-2100 after bias correction (to conform to BEST) |
| Phenology projections (2006-2100) | Research Computing: /n/wolkovich\_lab/climatefuture/corrected\_GCMs | Projections of phenology from 2006-2100 for each GCM |
| BEST dataset | <http://berkeleyearth.org/data/>  Research Computing: /n/wolkovich\_lab/climatefuture/BEST | Daily max/min temperatures from 1950-2013 |
| GCM climatologies | Research Computing: /n/wolkovich\_lab/climatefuture/GCM\_climatology | Averaged min max temps across 30 years for each GCM. Data to perform bias correction analyses |
| Preliminary results and figures | [Github](https://github.com/lizzieinvancouver/vin/tree/master/climatefuture/analyses): climatefuture/analyses/projections/output/figures | Results from validation analyses and virtual variety within Vassal |
| winefuture.tex;  winefuture\_supp\_inf.tex | Github:  climatefuture/docs/manuscript | Manuscript and supporting information |
| Sest of .nc files with precipitation data from CMIP5 | Research Computing: /n/wolkovich\_lab/climatefuture/precipitation | Precipitation data |
| Sets of .nc files with temperature simulation data from CMIP5 (pre-1850) | Research Computing: /n/wolkovich\_lab/climatefuture/pre-industrial | Pre-industrial climate |
| Climatology.precipitation.RData | Research Computing: /n/wolkovich\_lab/Lab/Nacho | Precipitation climatology  (climatology for precipitation .RData file with raster data on averaged precipitations for modelling maturity) |
| Set of files with maturity projections corresponding to each GCM simulation and each warming threshold (i.e. period) | /n/wolkovich\_lab/climatefuture/maturity/ | .RData files with projections of niche maturity for different warming scenarios (0C, 1.5C, 2C, 4C), years and varieties. |

*No longer relevant files* (but I just don’t want to delete references to them)

|  |  |  |
| --- | --- | --- |
| **File** | **Where** | **What** |
|  |  |  |
| Task list | [Teamwork](https://arboretum.teamwork.com/projects/114988-vitis/overview) | To-do list for analysis work and data processing  [As of 26 November 2020 Lizzie checked this and saw **nothing relevant**, she downloaded VitisTeamwork\_ProjectRepory\_26November2020.pdf to her computer.] |

29 November 2023

Email from Ben Cook on 29 Nov 2020:

Hi Lizzie!

I don’t think we need to keep the GCM data since it’s already ina public repo. I would just make clear where it was downloaded from, and which specific files or ensemble members were used.

~Ben

On Nov 27, 2020, 9:43 PM -0500, Elizabeth M Wolkovich <wolkovic@mail.ubc.ca>, wrote:

Hi Ben!

Happy belated American Thanksgiving.

Nacho (cc-ed) and I are wrapping up documentation of all the data, code

etc. we used for his PNAS paper this year. Most of the data is not our

to publish or published already so tickmark there. Nacho cleaned up much

of the code in advance of publication (yay). We're now debating how many

of the massive input and output projection files to keep. If you have

any opinions, please let us know.

In particular, the raw GCMs weigh in at several Tb. Do you think we need

to keep these? Or in a pinch can we just point people to where they are

publicly stored and save the Tb of hard drive space ....

Thanks,

Lizzie

-------- Forwarded Message --------

Subject: RE: Where datacode live!

Date: Fri, 27 Nov 2020 09:50:14 +0000

From: Morales Castilla Ignacio <ignacio.moralesc@uah.es>

To: e.wolkovich@ubc.ca <e.wolkovich@ubc.ca>

[CAUTION: Non-UBC Email]

Hi Lizzie,

I see your point and had not thought much about RC, but sure, we need a

more stable 'repository' where to leave the data. Your plan to keep bias

corrected GCMs and code seems reasonable, and I would add the

projections for the varieties. I don't think I have access to Oddissey

anymore, but what's there that I don't have stored myself, are the raw

GCMs (prior to bias correction). Keeping those files can be useful but

they weight a few Tb, so I guess it is up to you if you want to move

them to Midge.

I'm happy to upload what's needed to Midge and will keep (and organize)

all that data in my new server (still thinking of names, however I can't

buy it until Feb due to Spanish bureaucracy). I did not finished the

process to access Midge, so I'll get back to it and let you know if I

need anything else.

Best,

Nacho

-----Original Message-----

From: Elizabeth M Wolkovich <wolkovic@mail.ubc.ca> Sent: Friday,

November 27, 2020 2:51 AM

To: Morales Castilla Ignacio <ignacio.moralesc@uah.es>

Subject: Re: Where datacode live!

Hi Nacho,

I looked at you WhereDataCodeLive file (here:

https://docs.google.com/document/d/1rT1v28ex8c7LvkRyZbec-chYkVnQ\_xJTGYx0OyrgNbI/edit)

but I think it needs a few things. You'll see my requests in the

comments (basically add some info on the repos, add some github links to

the phenological data and what to do about Odyssey).

I don't want to finalize it just now as it's a little incomplete and it

links to a bunch of Harvard RC (Odyssey) files that won't be accessible

soon. \*Are the files on RC even up to date?\* I thought perhaps towards

the end you ran things on your own machines ... Basically I think we

should hold onto some of the main files that underlie the paper: the

bias corrected GCMs, the projections underlying the results. I am not

sure we have to keep ALL of them forever, but perhaps keep most for say,

3-5 years and keep the the bias corrected GCMs a long, long time?

I can make space on our server to keep them or if you feel you can keep

them somewhere that works too.

I am assuming between the code and bias corrected GCMs we could rebuild

all the results, yes? I think we definitely want to keep all the files

you'd need re-do the analyses ...

You know these files much better than me, so let me know what you think.

Happy to chat over WhatsApp or Skype or such sometime if easier that way.

All the best,

Lizzie

On 11/24/20 9:08 AM, Morales Castilla Ignacio wrote:

[CAUTION: Non-UBC Email]

Hi Lizzie,

I'm finally ending the big load of teaching for the semester (still

some to do next week and on January), and getting back on track with

super delayed stuff. I've been checking the file and I think it

actually could be under 'complete'.

Regarding your question about ospree files to pull, I'm not sure what

files exactly do you mean. I'm guessing you may refer to the ranges

project shapefiles and climate data. If so, please confirm and I will

send them to you (perhaps through a wetransfer link) so you can upload

them to the server.

All the best,

Nacho

Ps. Talking about servers, I now have some research money of my own

and am thinking about buying a server for myself and my students. I

have not much idea about what to purchase, so if you have any pointers

or specs about midge you can share, that would be really helpful!