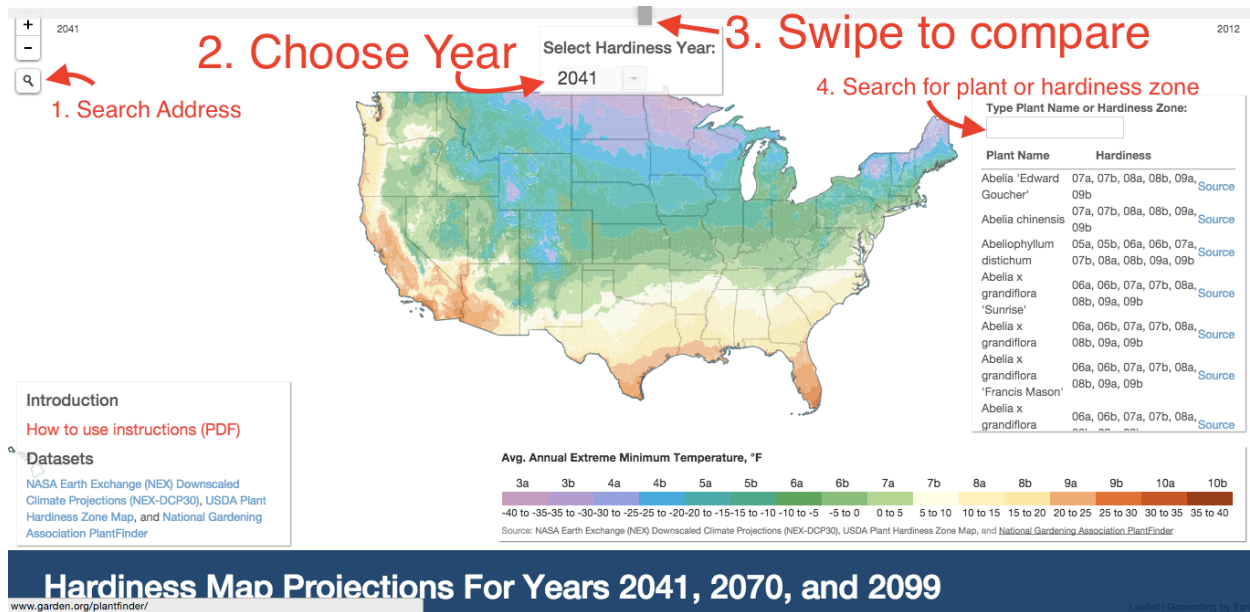


How to use

1. Search for address
2. Choose Hardiness Map projection year using the drop down menu
3. Use the map swiper to compare between plant hardiness maps
4. Type plant name or hardiness zone to find either



Hardiness Map Viewer

- Single Page Hardiness Map Viewer for the US.
- Use the slider to choose between hardiness map projections for 2041, 2070, 2099.
- Type plant name or hardiness zone to find it.
- Map Link: <http://www.wherewillplantsgrow.com/>

Methods

The regression / interpolation techniques were followed from:

<http://journals.ametsoc.org/doi/pdf/10.1175/2010JAMC2536.1>

netCDF data from NEX-DCP30 Tasmin average of coldest month of the year were averaged at 30 years intervals prior to 2012 and to each predicted hardiness map year: 2041, 2070, 2099.

Instead of PRISM data used in the paper above, I used the NEX-DCP30 Tasmin average from NASA NEX-DCP30.

Also, in the paper they have mentioned separating the contiguous US into East, West, and Central regions. Instead Köppen-Geiger climate classification was used to apply regression on areas with contiguous climate pattern:

<http://people.eng.unimelb.edu.au/mpeel/koppen.html>

ArcMap 10.2 was used to do the OLS regression on the 2012 PH (plant hardiness) analysis to generate coefficients for each climate zone, and then Kriging Interpolation was performed to generate PH maps for 2041, 2070, 2099.

Datasets used:

Source: [NASA Earth Exchange \(NEX\) Downscaled Climate Projections \(NEX-DCP30\)](#), [USDA Plant Hardiness Zone Map](#), and [National Gardening Association PlantFinder](#), and [Köppen-Geiger climate map](#)

Set up:

Git clone the repository at: <https://github.com/abdelhas/totalvision>

At the root directory:

```
npm install
```

```
sudo node server.js
```