

# Climate Match / Map Results

## About This Report

This report was generated for PlantRight's Plant Risk Evaluator (PRE). This climate match tool is designed for PRE users and plant scientists involved in the development, production, and distribution of horticultural plants. The climate match tool allows evaluators to quickly and consistently answer PRE's climate-related questions.

Horticultural growers or plant scientists interested in PRE and in promoting non-invasive plants for regional markets are invited to join the growing PRE community. Joining PRE is free and supports a collaborative approach to preventing new, regional plant invasions. Contact us below to get more information on how to join.

This toolkit is a collaboration between GreenInfo Network, PlantRight, Cal-IPC, and Agricultural Sustainability Institute at UC Davis. Funding is provided by Sustainable Conservation.

Contact us at [PlantRight@suscon.org](mailto:PlantRight@suscon.org) Learn more at [www.PlantRight.org](http://www.PlantRight.org).

## Data Layer Methods

The PRE Combined layer shows areas in the world where three variables (Plant Hardiness, Ecozones, and Precipitation) all match the conditions found in selected search geometry.

The PRE Combined layer was generated by merging together three input datasets (Plant Hardiness, Ecozones, and Precipitation) into a single three-band raster layer. To combine these three different datasets, they were each converted to raster format with the Precipitation dataset used as reference for cell size and extent. The three layers were combined into a single three-band raster layer using the Composite tool in Desktop ArcMap. The three-band raster was exported to .tif format for use in the web map. To generate lookup tables for the unique three-value combinations per state and ecoregion, the combined raster data was converted to point format, then joined with the states and ecoregion layers (Spatial Join tool) to generate summary tables.

Data methods guided by CAL-IPC and USDA recommendations. Precipitation Zones and Plant Hardiness Zones data: SAHA, SURANJANA, AND COAUTHORS, 2010: The NCEP Climate Forecast System Reanalysis. Bull. Amer. Meteor. Soc., 91, 1015-1057. doi: 0.1175/2010BAMS3001.1, 2010. Precipitation Zones and Plant Hardiness Zones methods: Magarey, R. D., D. M. Borchert, and J. Schlegel. 2008. Global plant hardiness zones for phytosanitary risk analysis. Scientia Agricola 65(Special Issue):54-59. Global Ecozones: United Nations, 2010, WGS84.

## Please Note

There are many climate match tools in use, each with varying criteria and degrees of specificity. We chose this tool for two reasons: 1) it aligns with the criteria used by the USDA's weed risk assessment for matching climate; and 2) it provides sufficient data for PRE users to answer the PRE climate related questions in a consistent, if not confident manner. Is this, or any climate match method perfect? No. Does this meet our needs for answering PRE questions? Yes. As PRE research continues, we shall look for ways to strengthen our PRE resources even further. We always welcome constructive feedback from our constituents.

# Climate Match / Map Results

## Selected Areas and Map Legends

### Selected States

Washington

### Precipitation

-  0-10in / 0-25cm
-  10-20in / 25-51cm
-  20-30in / 51-76cm
-  30-40in / 76-102cm
-  40-50in / 102-127cm
-  50-60in / 127-152cm
-  60-70in / 152-178cm
-  70-80in / 178-203cm
-  80-90in / 203-229cm
-  90-100in / 229-254cm
-  100+ / 254+

### Plant Hardiness Zones

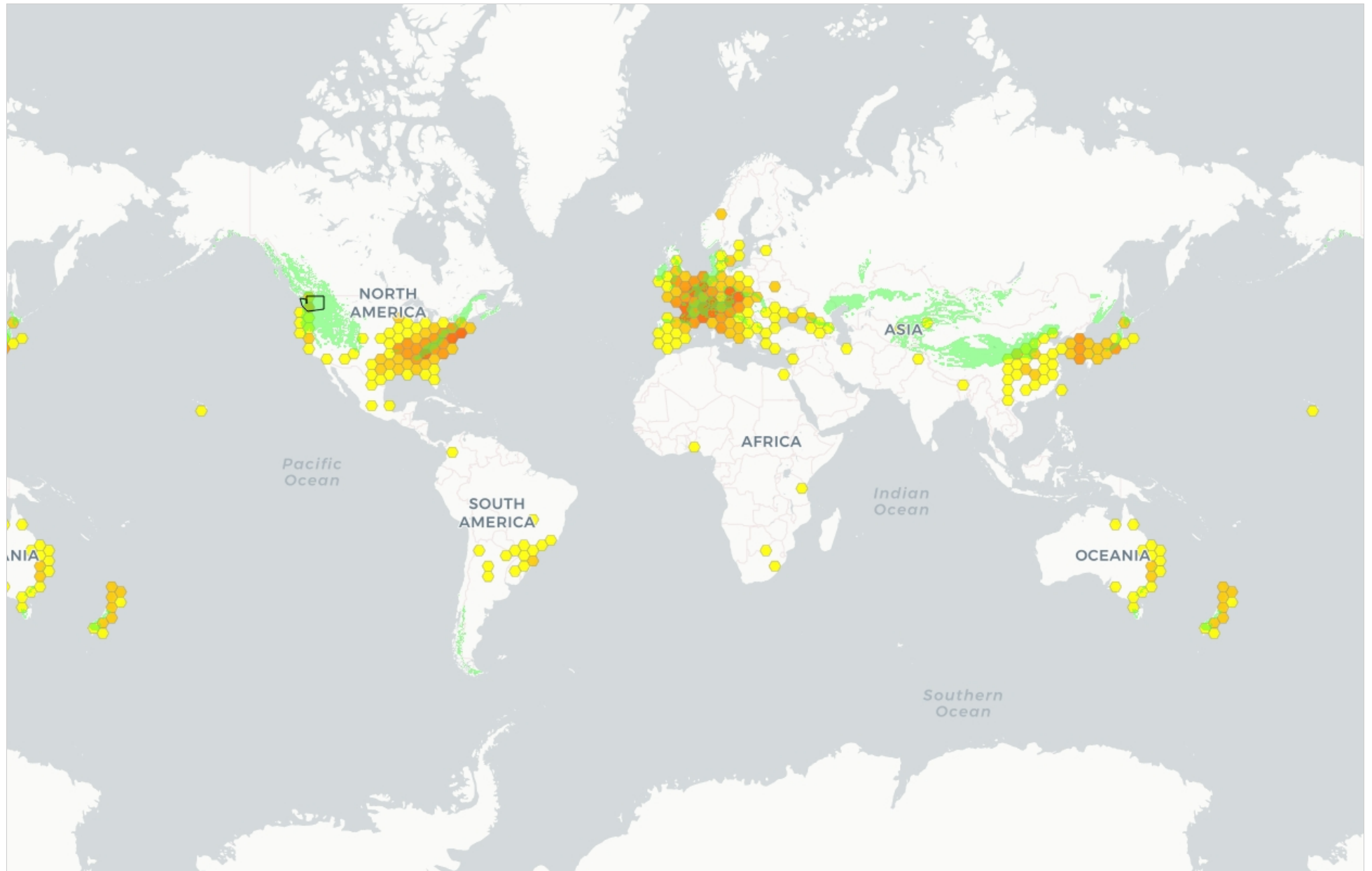
-  Zone 1
-  Zone 2
-  Zone 3
-  Zone 4
-  Zone 5
-  Zone 6
-  Zone 7
-  Zone 8
-  Zone 9
-  Zone 10
-  Zone 11
-  Zone 12
-  Zone 13

### UN Global Ecological Zones

-  Tropical rainforest
-  Tropical moist forest
-  Tropical dry forest
-  Tropical shrubland
-  Tropical desert
-  Tropical mountain system
-  Tropical humid forest
-  Subtropical dry forest
-  Subtropical steppe
-  Subtropical desert
-  Subtropical mountain system
-  Temperate oceanic forest
-  Temperate continental forest
-  Temperate steppe
-  Temperate desert
-  Temperate mountain system
-  Boreal coniferous forest
-  Boreal tundra woodland
-  Boreal mountain system
-  Polar
-  Water

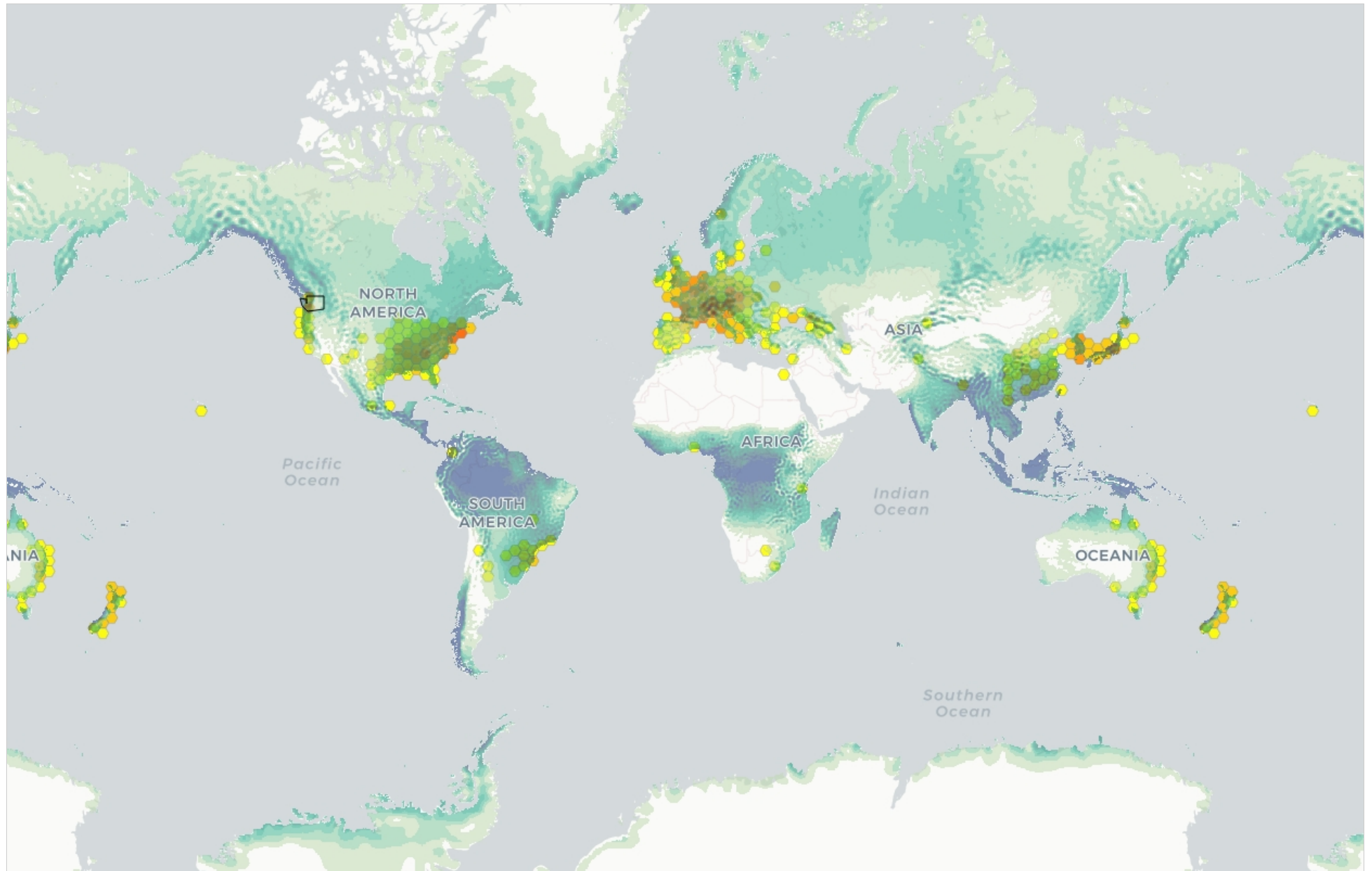
## Climate Match / Map Results

### PRE Combined



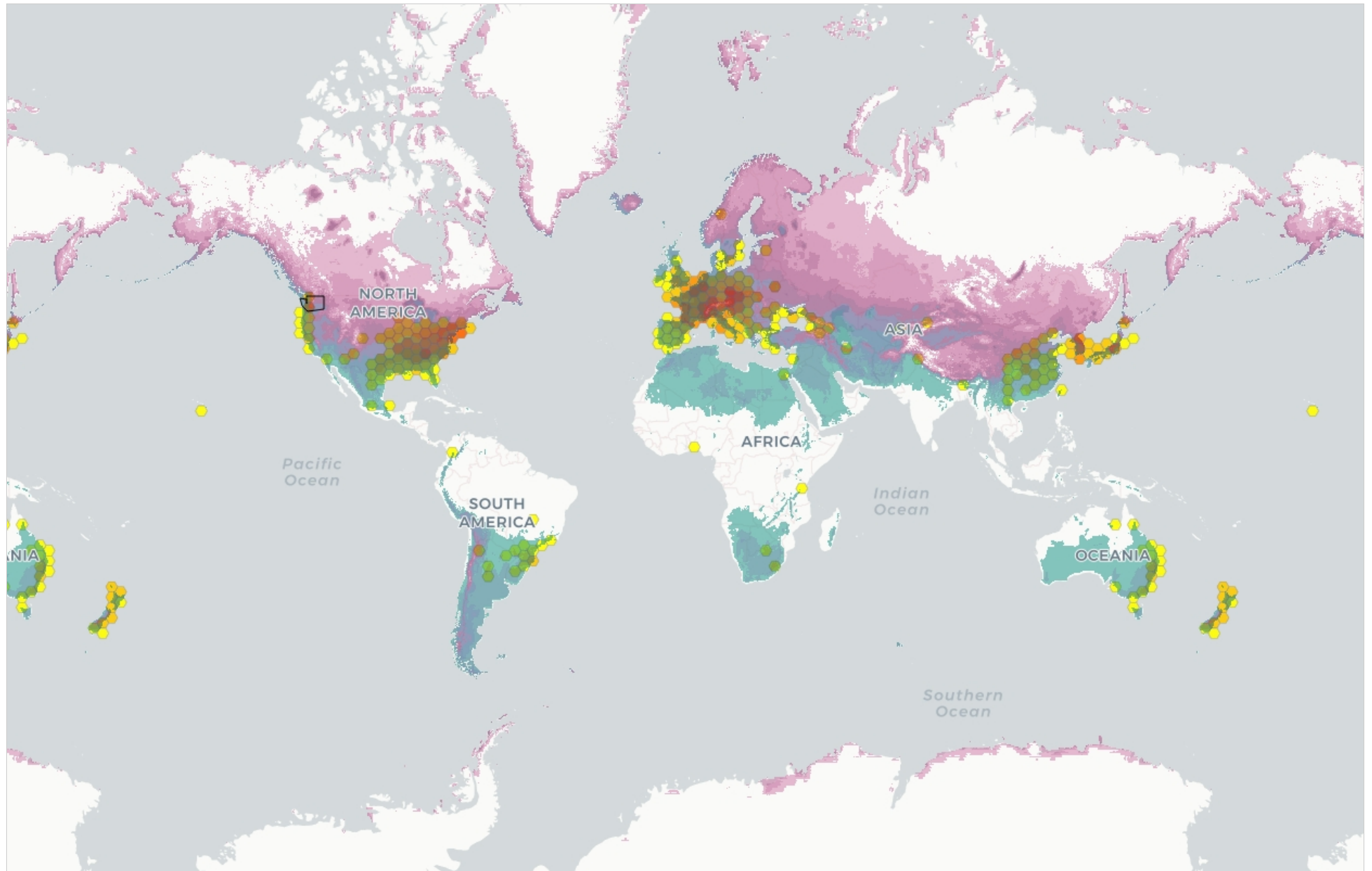
## Climate Match / Map Results

### Precipitation



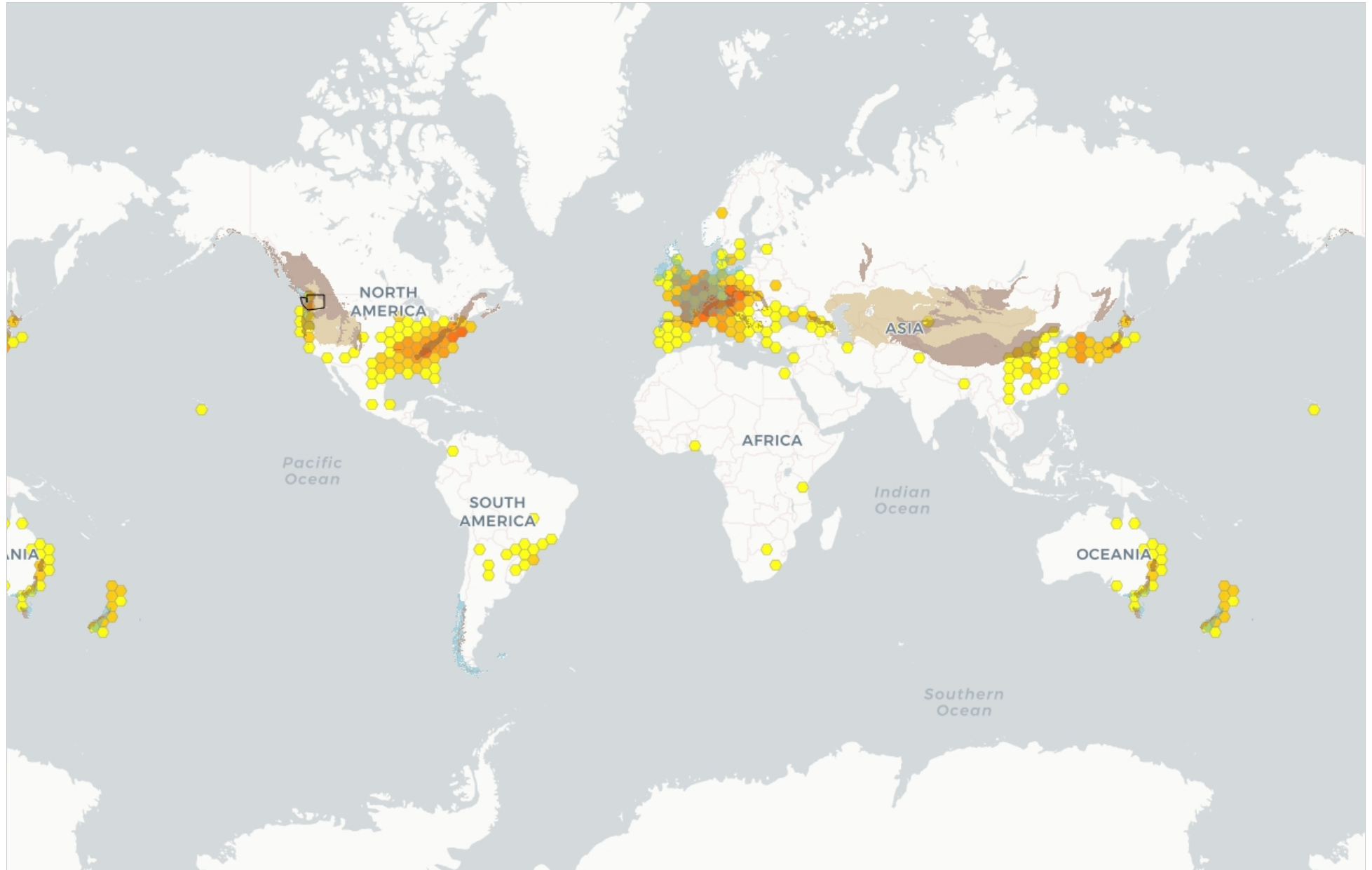
## Climate Match / Map Results

### USDA Plant Hardiness Zones



## Climate Match / Map Results

### UN Global Ecological Zones



## Climate Match / Map Results

| Hardiness | Precipitation        | UN Ecozone                | Hardiness | Precipitation        | UN Ecozone                |
|-----------|----------------------|---------------------------|-----------|----------------------|---------------------------|
| Zone 3    | 20-30in / 51-76cm    | Temperate mountain system | Zone 7    | 20-30in / 51-76cm    | Temperate desert          |
| Zone 4    | 10-20in / 25-51cm    | Temperate desert          | Zone 7    | 20-30in / 51-76cm    | Temperate mountain system |
| Zone 4    | 10-20in / 25-51cm    | Temperate mountain system | Zone 7    | 30-40in / 76-102cm   | Temperate desert          |
| Zone 4    | 20-30in / 51-76cm    | Temperate mountain system | Zone 7    | 30-40in / 76-102cm   | Temperate mountain system |
| Zone 4    | 30-40in / 76-102cm   | Temperate desert          | Zone 7    | 40-50in / 102-127cm  | Temperate desert          |
| Zone 4    | 30-40in / 76-102cm   | Temperate mountain system | Zone 7    | 40-50in / 102-127cm  | Temperate mountain system |
| Zone 4    | 40-50in / 102-127cm  | Temperate desert          | Zone 7    | 40-50in / 102-127cm  | Temperate oceanic forest  |
| Zone 4    | 40-50in / 102-127cm  | Temperate mountain system | Zone 7    | 50-60in / 127-152cm  | Temperate mountain system |
| Zone 4    | 50-60in / 127-152cm  | Temperate mountain system | Zone 7    | 60-70in / 152-178cm  | Temperate mountain system |
| Zone 4    | 60-70in / 152-178cm  | Temperate mountain system | Zone 7    | 70-80in / 178-203cm  | Temperate mountain system |
| Zone 4    | 70-80in / 178-203cm  | Temperate mountain system | Zone 7    | 70-80in / 178-203cm  | Temperate oceanic forest  |
| Zone 4    | 80-90in / 203-229cm  | Temperate mountain system | Zone 7    | 80-90in / 203-229cm  | Temperate mountain system |
| Zone 4    | 90-100in / 229-254cm | Temperate mountain system | Zone 7    | 80-90in / 203-229cm  | Temperate oceanic forest  |
| Zone 5    | 10-20in / 25-51cm    | Temperate desert          | Zone 7    | 90-100in / 229-254cm | Temperate mountain system |
| Zone 5    | 10-20in / 25-51cm    | Temperate mountain system | Zone 8    | 100in+ / 254cm+      | Temperate mountain system |
| Zone 5    | 20-30in / 51-76cm    | Temperate desert          | Zone 8    | 30-40in / 76-102cm   | Temperate mountain system |
| Zone 5    | 20-30in / 51-76cm    | Temperate mountain system | Zone 8    | 30-40in / 76-102cm   | Temperate oceanic forest  |
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| Zone 5    | 70-80in / 178-203cm  | Temperate mountain system | Zone 8    | 70-80in / 178-203cm  | Temperate mountain system |
| Zone 5    | 80-90in / 203-229cm  | Temperate mountain system | Zone 8    | 70-80in / 178-203cm  | Temperate oceanic forest  |
| Zone 5    | 90-100in / 229-254cm | Temperate mountain system | Zone 8    | 80-90in / 203-229cm  | Temperate mountain system |
| Zone 6    | 10-20in / 25-51cm    | Temperate desert          | Zone 8    | 80-90in / 203-229cm  | Temperate oceanic forest  |
| Zone 6    | 10-20in / 25-51cm    | Temperate mountain system | Zone 8    | 90-100in / 229-254cm | Temperate mountain system |
| Zone 6    | 100in+ / 254cm+      | Temperate mountain system | Zone 8    | 90-100in / 229-254cm | Temperate oceanic forest  |
| Zone 6    | 100in+ / 254cm+      | Temperate oceanic forest  | Zone 9    | 40-50in / 102-127cm  | Temperate oceanic forest  |
| Zone 6    | 20-30in / 51-76cm    | Temperate desert          | Zone 9    | 50-60in / 127-152cm  | Temperate oceanic forest  |
| Zone 6    | 20-30in / 51-76cm    | Temperate mountain system | Zone 9    | 60-70in / 152-178cm  | Temperate mountain system |
| Zone 6    | 30-40in / 76-102cm   | Temperate desert          | Zone 9    | 70-80in / 178-203cm  | Temperate mountain system |
| Zone 6    | 30-40in / 76-102cm   | Temperate mountain system | Zone 9    | 80-90in / 203-229cm  | Temperate mountain system |
| Zone 6    | 40-50in / 102-127cm  | Temperate desert          | Zone 10   | 50-60in / 127-152cm  | Temperate mountain system |
| Zone 6    | 40-50in / 102-127cm  | Temperate mountain system | Zone 10   | 60-70in / 152-178cm  | Temperate mountain system |
| Zone 6    | 50-60in / 127-152cm  | Temperate mountain system | Zone 10   | 70-80in / 178-203cm  | Temperate mountain system |
| Zone 6    | 60-70in / 152-178cm  | Temperate mountain system |           |                      |                           |
| Zone 6    | 70-80in / 178-203cm  | Temperate mountain system |           |                      |                           |
| Zone 6    | 80-90in / 203-229cm  | Temperate mountain system |           |                      |                           |
| Zone 6    | 90-100in / 229-254cm | Temperate mountain system |           |                      |                           |
| Zone 7    | 10-20in / 25-51cm    | Temperate desert          |           |                      |                           |
| Zone 7    | 10-20in / 25-51cm    | Temperate mountain system |           |                      |                           |
| Zone 7    | 100in+ / 254cm+      | Temperate mountain system |           |                      |                           |
| Zone 7    | 100in+ / 254cm+      | Temperate oceanic forest  |           |                      |                           |