Climate Match Version 2.0 / Map Results

Date: October 26, 2026

About This Report

- Region: United States - California
- Species: Centaurea iberica

Link to this search: https://weedmap.cal-ipc.org/climatematch/?areaType=states&areaList%5B%5D=US-CA&mapView=5%2C-107.82015%2C40.50314&gbif_search=centaurea%20iberica&gbif_taxonkey=3129000&gbif_speciesname=Centaurea%20iberica&datalayer=COMBINED&datalayeropacity=60

This report was generated by the Climate Match Tool at https://weedmap.cal-ipc.org/climatematch/. It is designed for users in North America to help compare two sets of data: (1) the current known worldwide distribution of a given plant species and (2) areas of the world with climatic parameters matching a user-selected part of North America. This allows users to determine whether the plant is found in other areas with a similar climate to the region of interest in North America.

Such information is useful when assessing the potential for a plant species to be invasive in a given region. This tool was initially developed by the PlantRight project (www.plantright.org) to assist horticultural partners in screening potential new plant introductions. The tool is now overseen by the California Invasive Plant Council (www.cal-ipc.org) to help land managers assess the future risk of nonnative plants in a given area. The tool is built and maintained by GreenInfo Network (www.greeninfo.org).

Data Layer Methods and Sources

To assess "climate match", this tool compares the values for a set of climatic parameters in the selected region of interest with values for those same parameters around the world. The three climatic parameters considered are precipitation (in bands of 10 inches annual precipitation), USDA hardiness zone ("Hardiness"), and UN global ecological zone ("Ecozone"). By combining all three ("Combined"), the tool determines which areas around the globe match at least a part of the region of interest.

- Data for precipitation bands and plant hardiness zones: "SAFARIS (Spatial Analytic Framework for Advanced Risk Information Systems)" Mapping portal. https://safaris.cipm.info/safarispestmodel/StartupServlet?safaristools
- Methods for precipitation bands and plant hardiness zones: Takeuchi et al. 2023. SAFARIS: a spatial analytic framework for pest forecast systems. Frontiers of Insect Science 3:1198355. https://www.frontiersin.org/journals/insect-science/articles/10.3389/finsc.2023.1198355/full
- Global ecozones: Beck et al. 2023. High-resolution (1 km) Köppen-Geiger maps for 1901–2099 based on constrained CMIP6 projections. Scientific Data 10, 724, doi:10.1038/s41597-023-02549-6. https://figshare.com/articles/dataset/High-resolution_1_km_K_ppen-Geiger_maps_for_1901_2099_based_on_constrained_CMIP6_projections/21789074/1
- Plant species distribution: Global Biodiversity Information Facility (GBIF). https://www.gbif.org/
- The data presented on the map has a resolution of 0.1 degrees (approximately 10,500m square).

Updates

The Climate Match Tool was updated in May 2026, with several changes made. First, newer data layers were used for precipitation, plant hardiness, and ecozones. Second, the user can now select any region in North America, while the previous version was limited to the United States. Third, climate combinations that make up less than 1% of the selected area were excluded from the climate match, since these uncommon combinations have the potential to identify matching areas that are not very relevant. Finally, the new version includes a “Combined (Buffered)” layer, where the area highlighted includes cells where either the precipitation or hardiness value is not an exact match, but is off by one unit in either direction (for instance, 5 inches more or less of precipitation than the exact match would be). The intent is to help users see additional areas that are a close, if not exact, match to climate combinations from their area of interest.

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Selected Areas and Map Legends

Selected States

United States - California

Precipitation

- 0-5 in / 0-13 cm
- 5-10 in / 13-25 cm
- 10-15 in / 25-38 cm
- 15-20 in / 38-51 cm
- 20-25 in / 51-64 cm
- 25-30 in / 64-76 cm
- 30-35 in / 76-89 cm
- 35-40 in / 89-102 cm
- 40-45 in / 102-114 cm
- 45-50 in / 114-127 cm
- 50-55 in / 127-140 cm
- 55-60 in / 140-152 cm
- 60-65 in / 152-165 cm
- 65-70 in / 165-178 cm
- 70-75 in / 178-191 cm
- 75-80 in / 191-203 cm
- 80-85 in / 203-216 cm
- 85-90 in / 216-229 cm
- 90-95 in / 229-241 cm
- 95-100 in / 241-254 cm
- 100+ in / 254+ cm

Plant Hardiness Zones

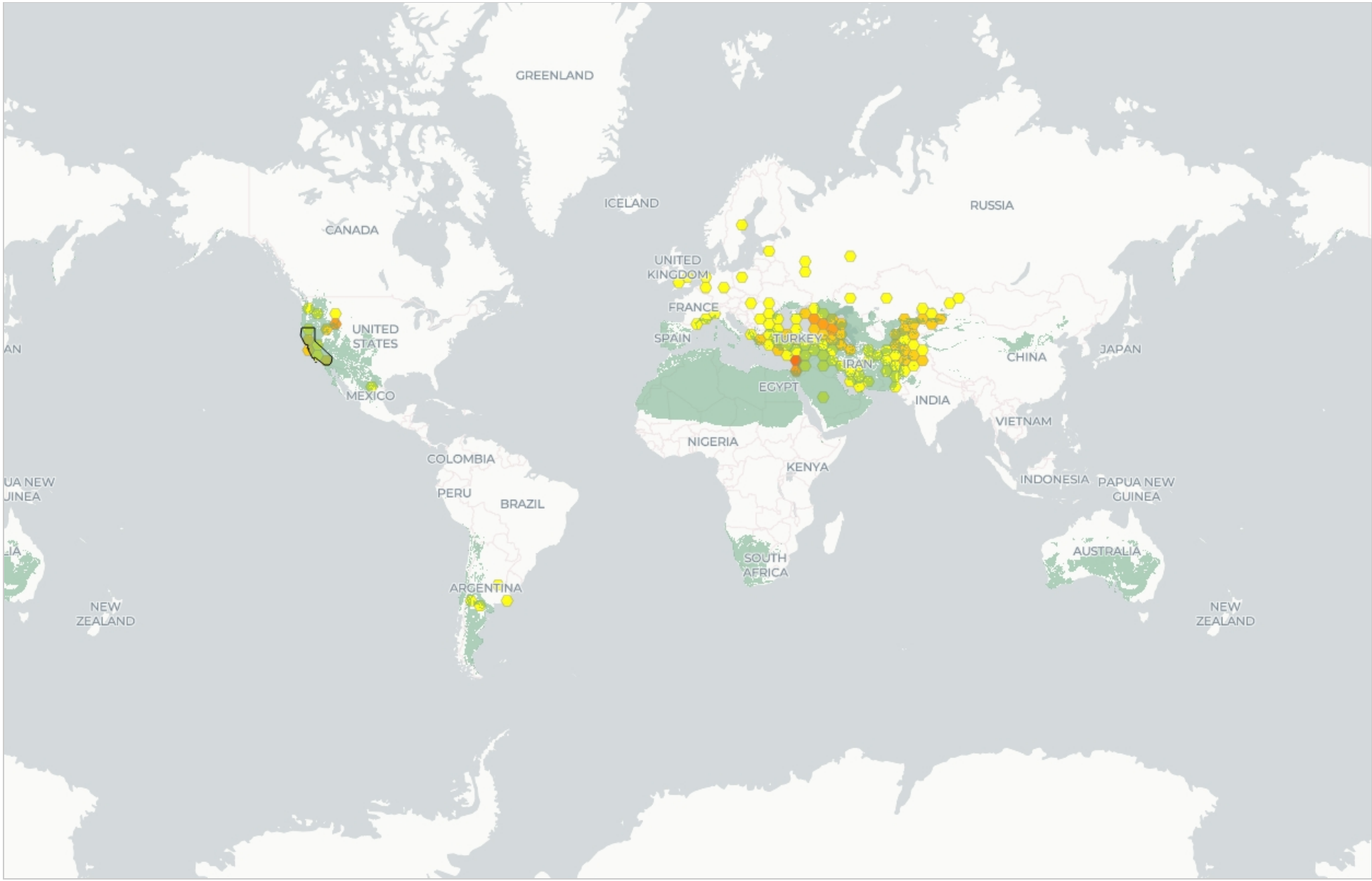
- Zone 1a (-60˚ to -55˚F)
- Zone 1b (-55˚ to -50˚F)
- Zone 2a (-50˚ to -45˚F)
- Zone 2b (-45˚ to -40˚F)
- Zone 3a (-40˚ to -35˚F)
- Zone 3b (-35˚ to -30˚F)
- Zone 4a (-30˚ to -25˚F)
- Zone 4b (-25˚ to -20˚F)
- Zone 5a (-20˚ to -15˚F)
- Zone 5b (-15˚ to -10˚F)
- Zone 6a (-10˚ to -5˚F)
- Zone 6b (-5˚ to 0˚F)
- Zone 7a (0˚ to 5˚F)
- Zone 7b (5˚ to 10˚F)
- Zone 8a (10˚ to 15˚F)
- Zone 8b (15˚ to 20˚F)
- Zone 9a (20˚ to 25˚F)
- Zone 9b (25˚ to 30˚F)
- Zone 10a (30˚ to 35˚F)
- Zone 10b (35˚ to 40˚F)
- Zone 11a (40˚ to 45˚F)
- Zone 11b (45˚ to 50˚F)
- Zone 12a (50˚ to 55˚F)
- Zone 12b (55˚ to 60˚F)
- Zone 13a (60˚ to 65˚F)
- Zone 13b (65˚ to 70˚F)
- Zone 14a (70˚ to 75˚F)
- Zone 14b (75˚ to 80˚F)

UN Global Ecological Zones

- Tropical, rainforest
- Tropical, monsoon
- Tropical, savannah
- Arid, desert, hot
- Arid, desert, cold
- Arid, steppe, hot
- Arid, steppe, cold
- Temperate, dry summer, hot summer
- Temperate, dry summer, warm summer
- Temperate, dry summer, cold summer
- Temperate, dry winter, hot summer
- Temperate, dry winter, warm summer
- Temperate, dry winter, cold summer
- Temperate, no dry season, hot summer
- Temperate, no dry season, warm summer
- Temperate, no dry season, cold summer
- Cold, dry summer, hot summer
- Cold, dry summer, warm summer
- Cold, dry summer, cold summer
- Cold, dry summer, very cold winter
- Cold, dry winter, hot summer
- Cold, dry winter, warm summer
- Cold, dry winter, cold summer
- Cold, dry winter, very cold winter
- Cold, no dry season, hot summer
- Cold, no dry season, warm summer
- Cold, no dry season, cold summer
- Cold, no dry season, very cold winter
- Polar, tundra
- Polar, frost

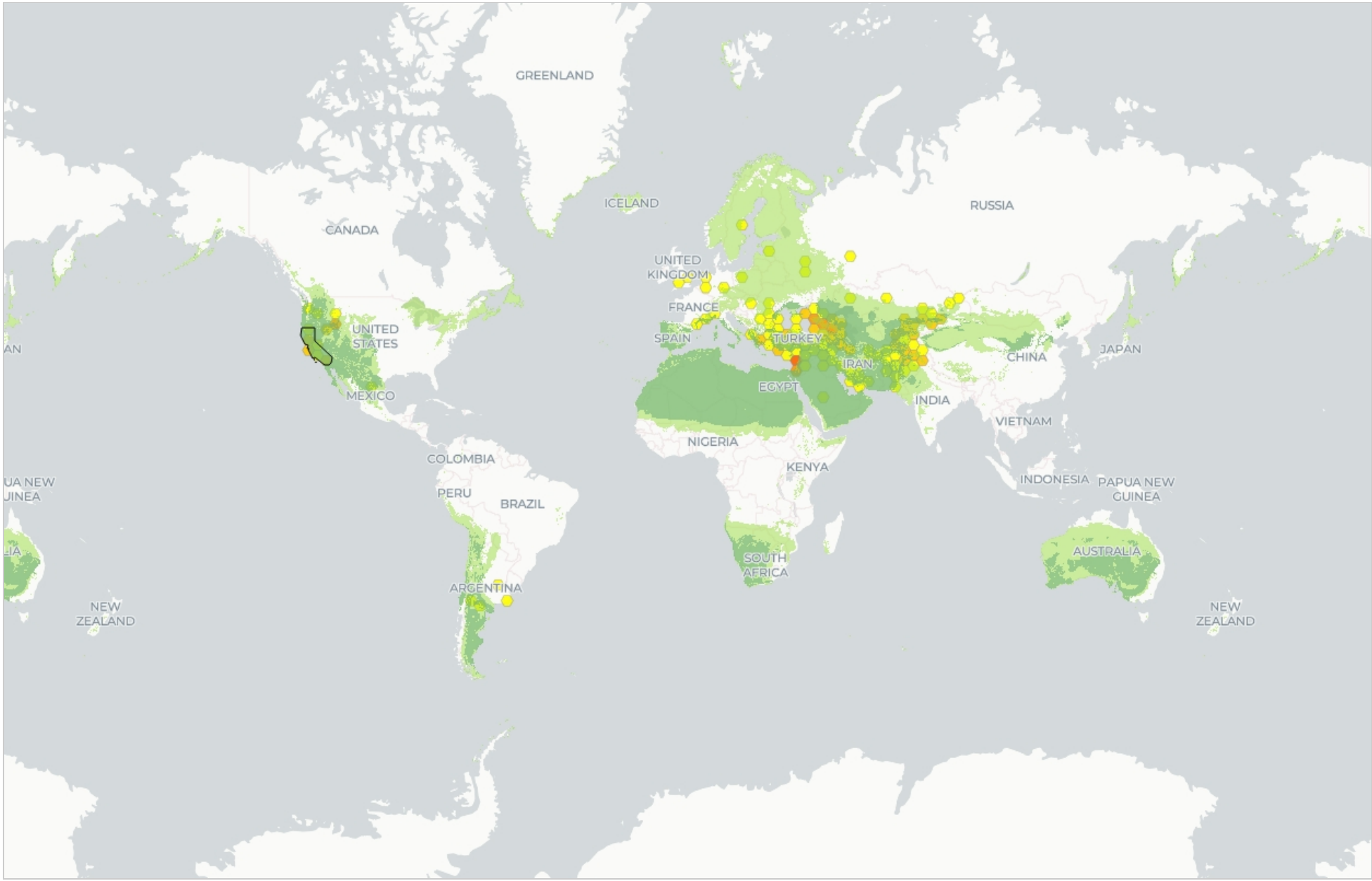
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PRE Combined



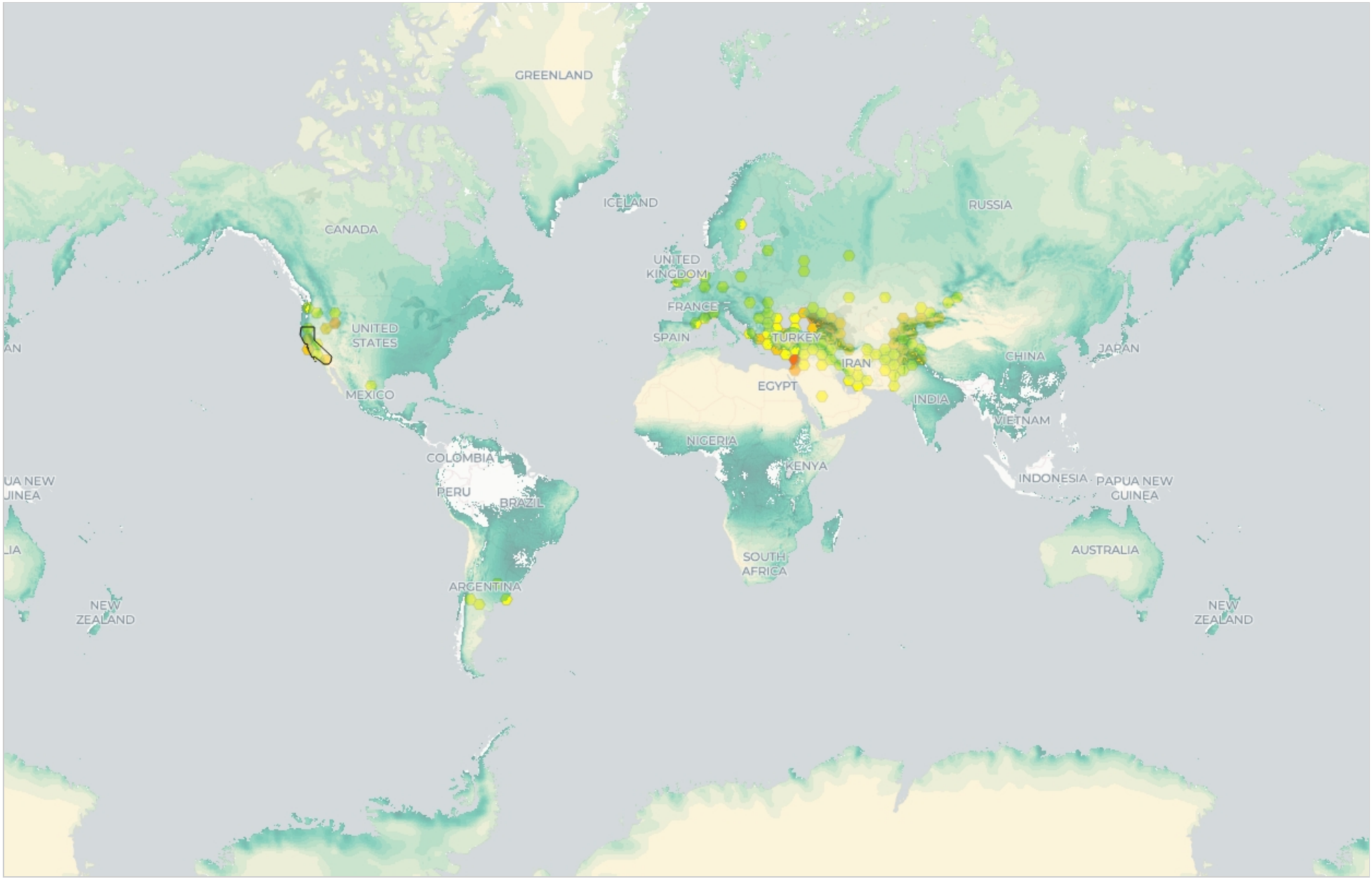
Climate Match Version 2.0 / Map Results

PRE Combined (Buffered)



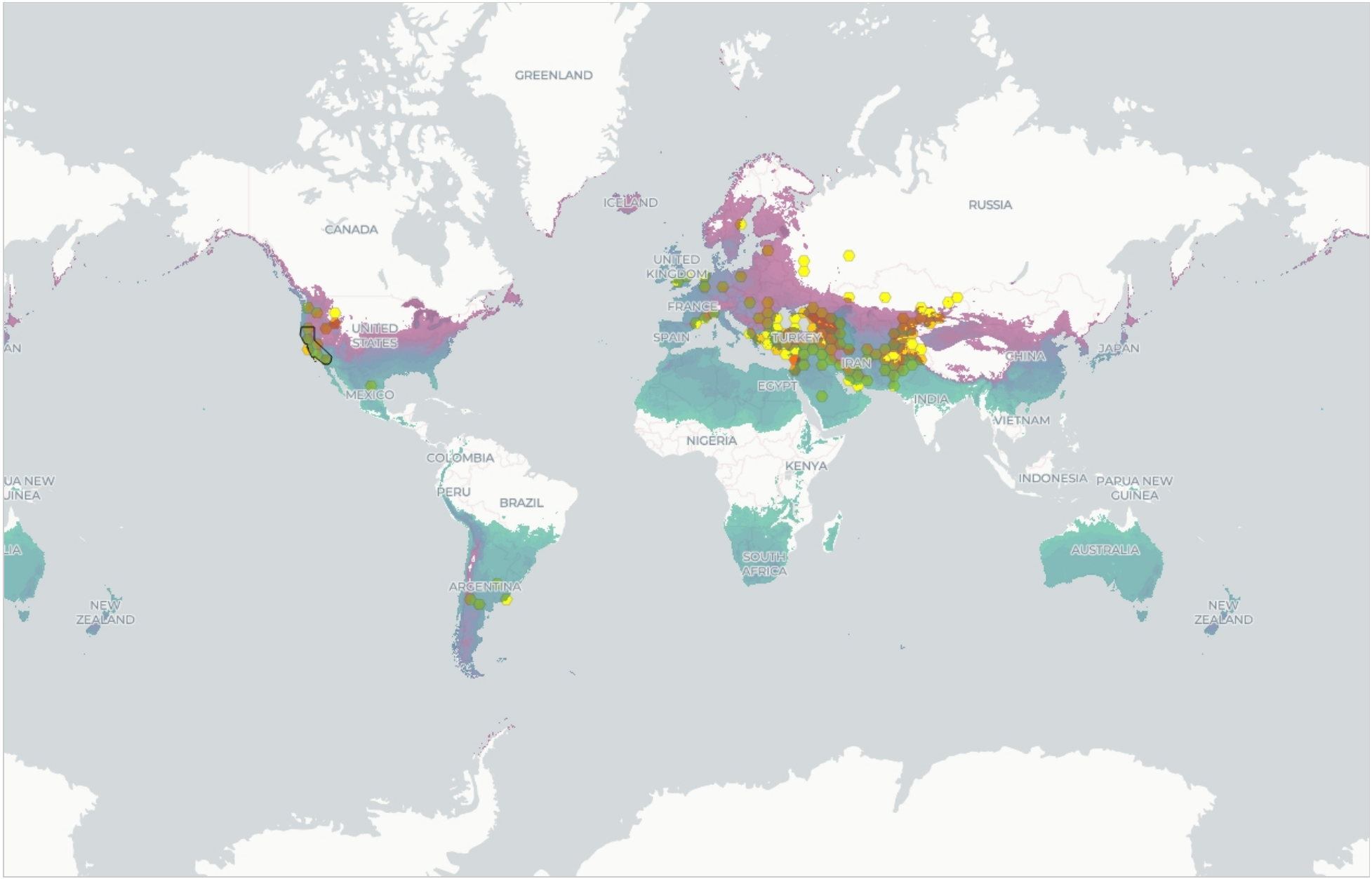
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Precipitation



Climate Match Version 2.0 / Map Results

USDA Plant Hardiness Zones



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UN Global Ecological Zones

