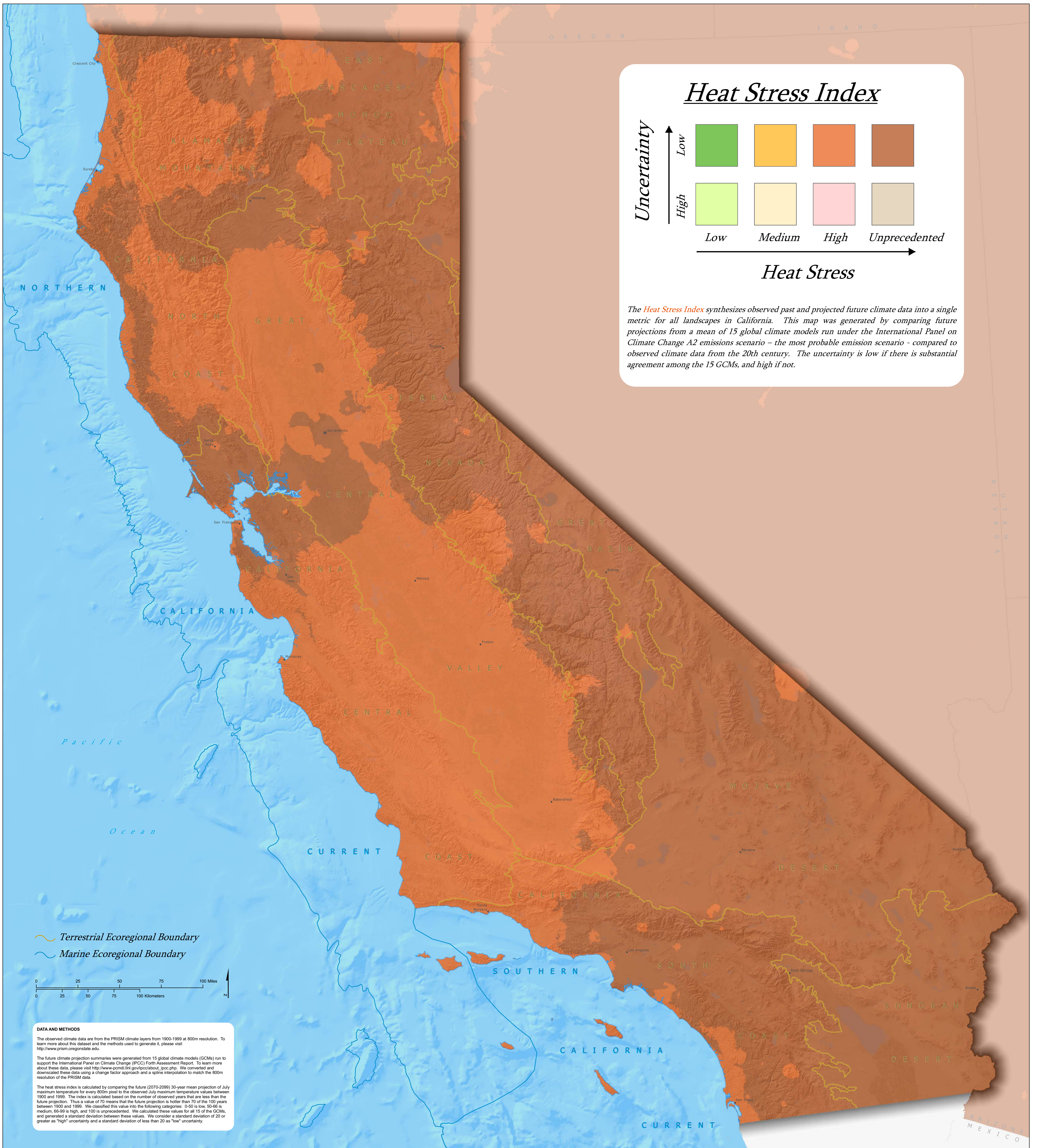
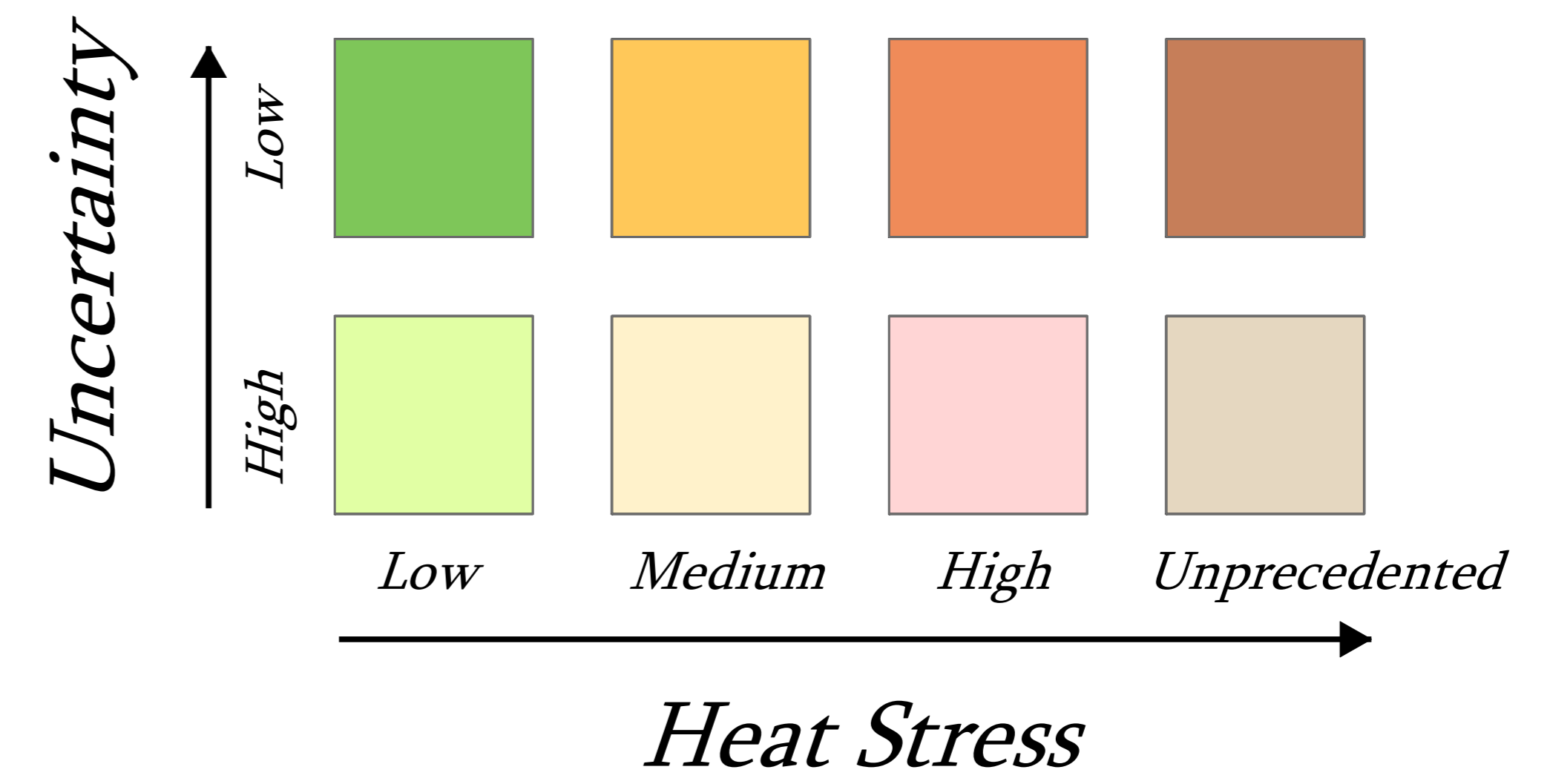


# California's Heat Stress Index

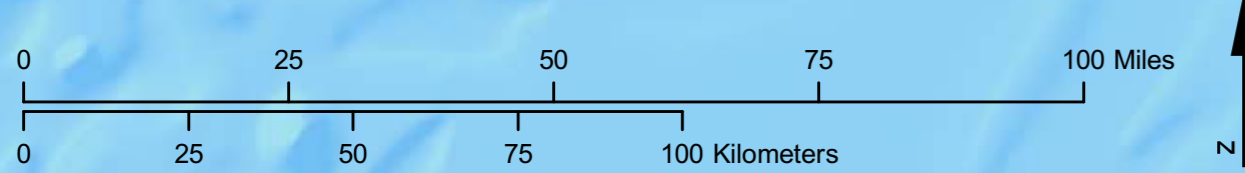


## Heat Stress Index



The *Heat Stress Index* synthesizes observed past and projected future climate data into a single metric for all landscapes in California. This map was generated by comparing future projections from a mean of 15 global climate models run under the International Panel on Climate Change A2 emissions scenario – the most probable emission scenario – compared to observed climate data from the 20th century. The uncertainty is low if there is substantial agreement among the 15 GCMs, and high if not.

Terrestrial Ecoregional Boundary  
 Marine Ecoregional Boundary



**DATA AND METHODS**

The observed climate data are from the PRISM climate layers from 1900-1999 at 800m resolution. To learn more about this dataset and the methods used to generate it, please visit <http://www.prism.oregonstate.edu>.

The future climate projection summaries were generated from 15 global climate models (GCMs) run to support the International Panel on Climate Change (IPCC) Fourth Assessment Report. To learn more about these data, please visit [http://www.pcmdi.int.gov/ipcc/about\\_ipcc.php](http://www.pcmdi.int.gov/ipcc/about_ipcc.php). We converted and downloaded these data using a change factor approach and a spline interpolation to match the 800m resolution of the PRISM data.

The heat stress index is calculated by comparing the future (2070-2099) 30-year mean projection of July maximum temperature for every 800m pixel to the observed July maximum temperature values between 1900 and 1999. The index is calculated based on the number of observed years that are less than the future projection. Thus a value of 70 means that the future projection is hotter than 70 of the 100 years between 1900 and 1999. We classified this value into the following categories: 0-50 is low, 50-66 is medium, 66-99 is high, and 100 is unprecedented. We calculated these values for all 15 of the GCMs, and generated a standard deviation between these values. We consider a standard deviation of 20 or greater as "high" uncertainty and a standard deviation of less than 20 as "low" uncertainty.