

Station gap analysis

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(with a little help from Adam)

Overview

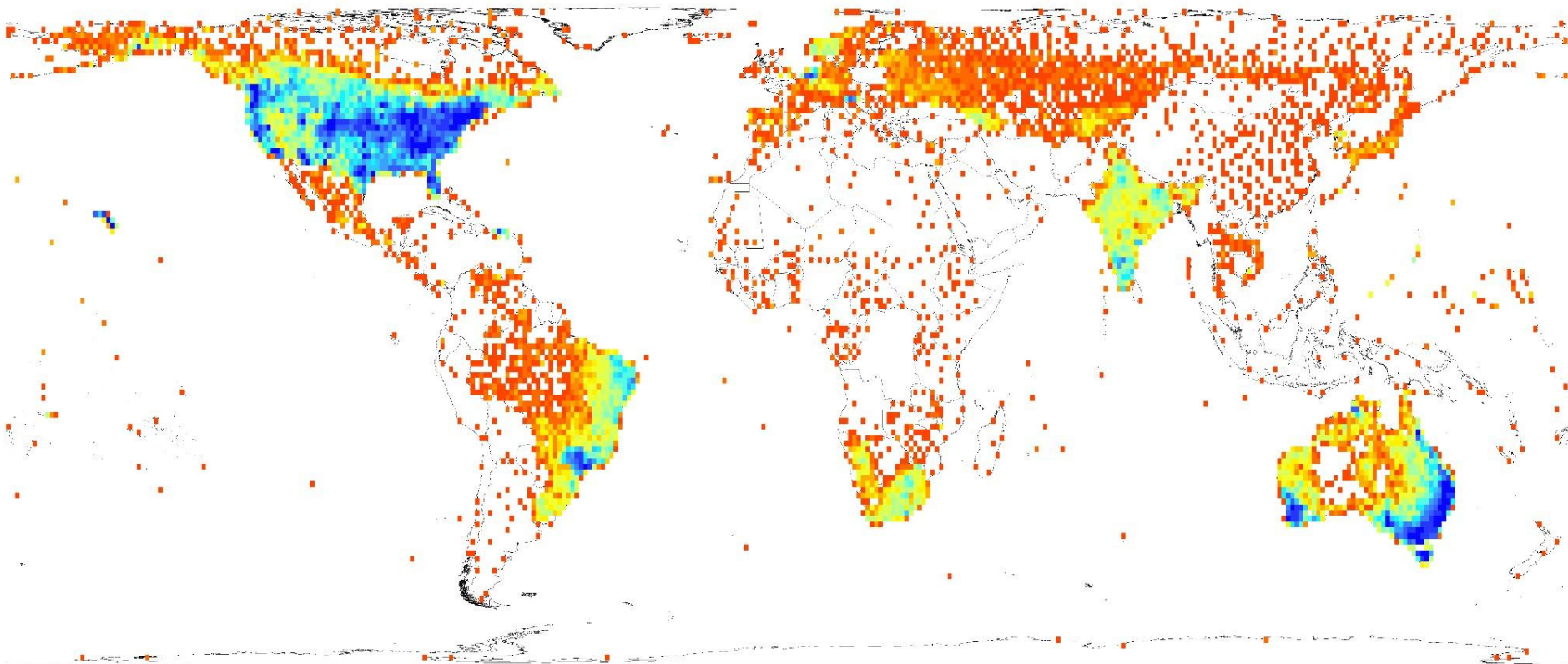
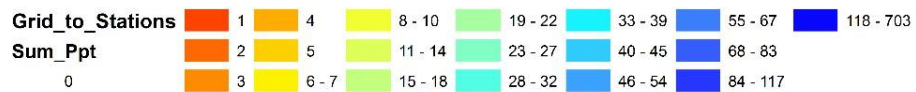
Methods

1. GHCN Daily
2. 10km raster of Distance-to-Station
3. Summarized by:
 - a. 1-degree grid
 - b. Countries
 - c. Climate (Mean Annual temp)

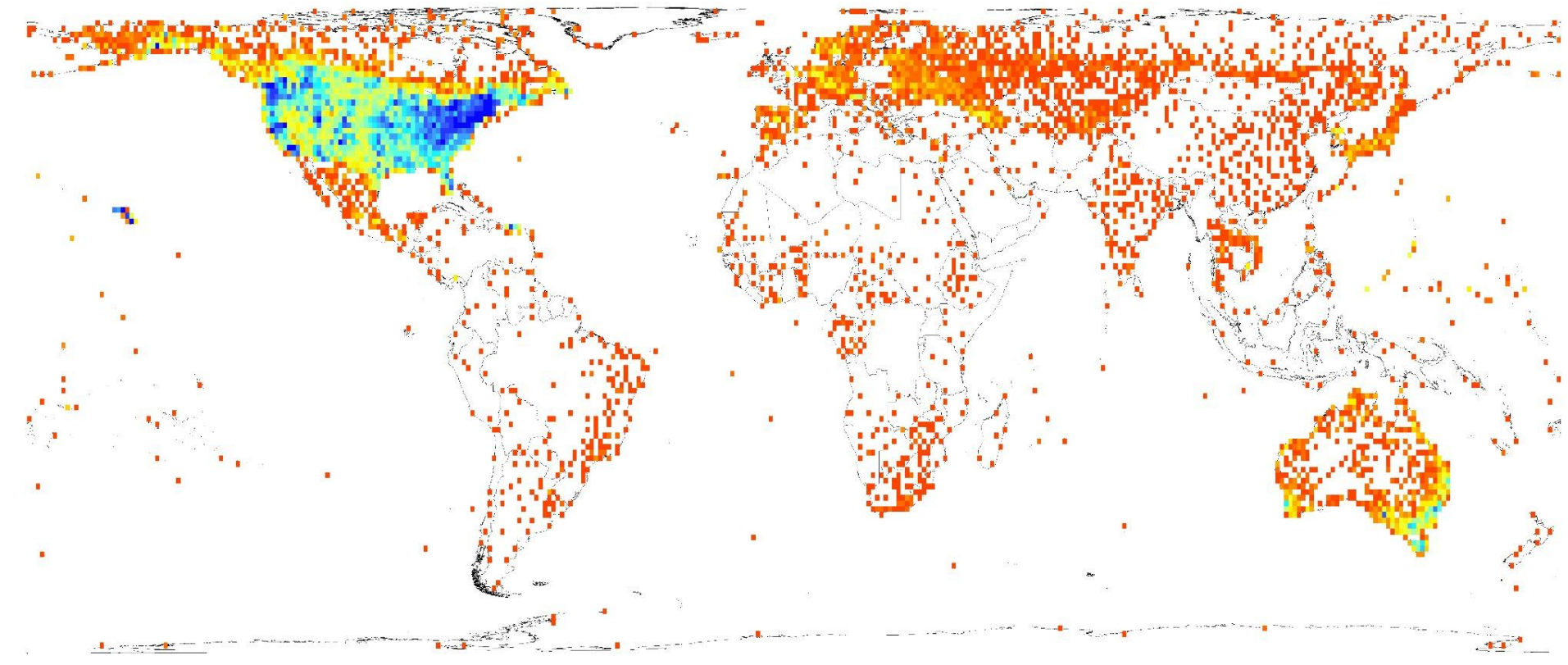
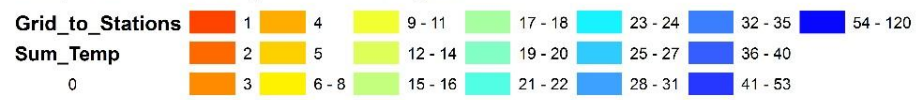
Next Steps

1. Temporal subsets (1970-1990 & 1990-2012)
2. Spatial priorities (countries)

Precipitation Stations per 110km2: Legend



Temperature Stations per 110km2: Legend



Legend: Distance to Nearest Precipitation Station (km)

distpntnew

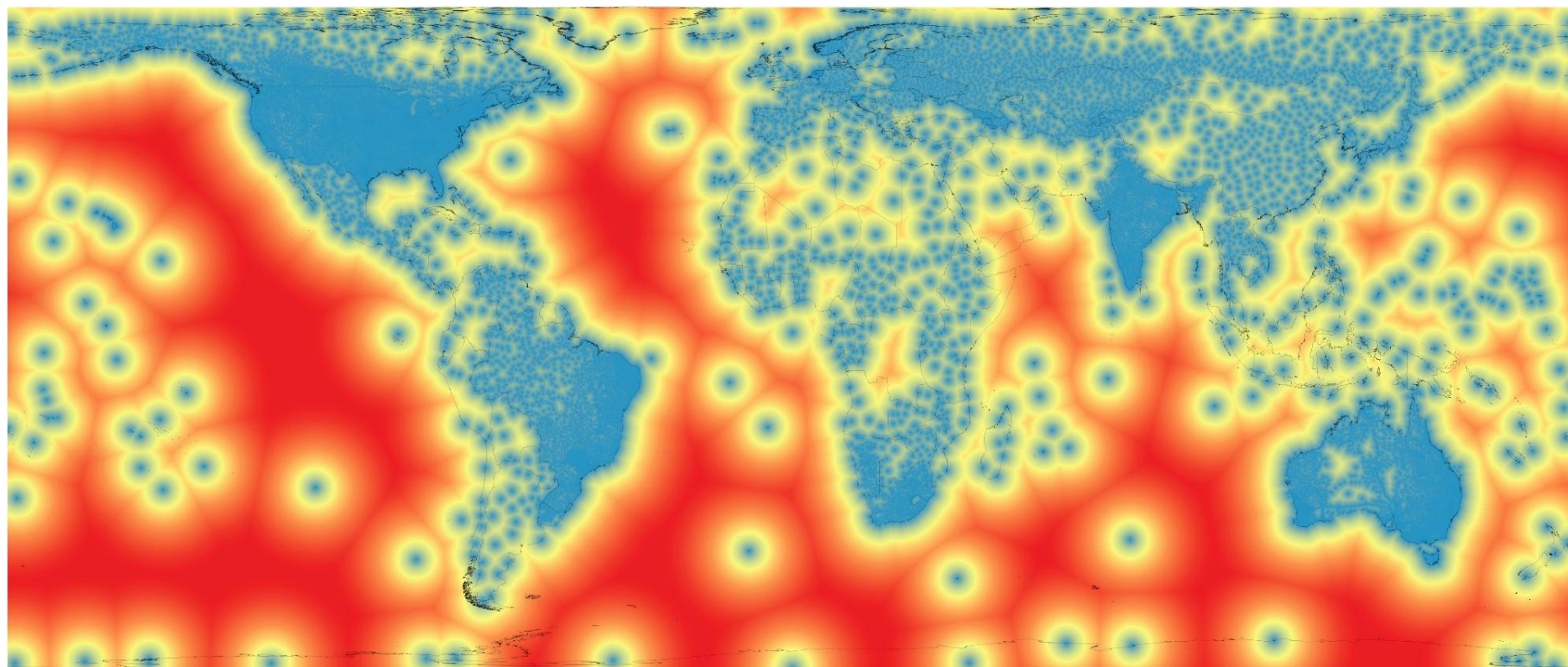
Value

2.18002e+003



416

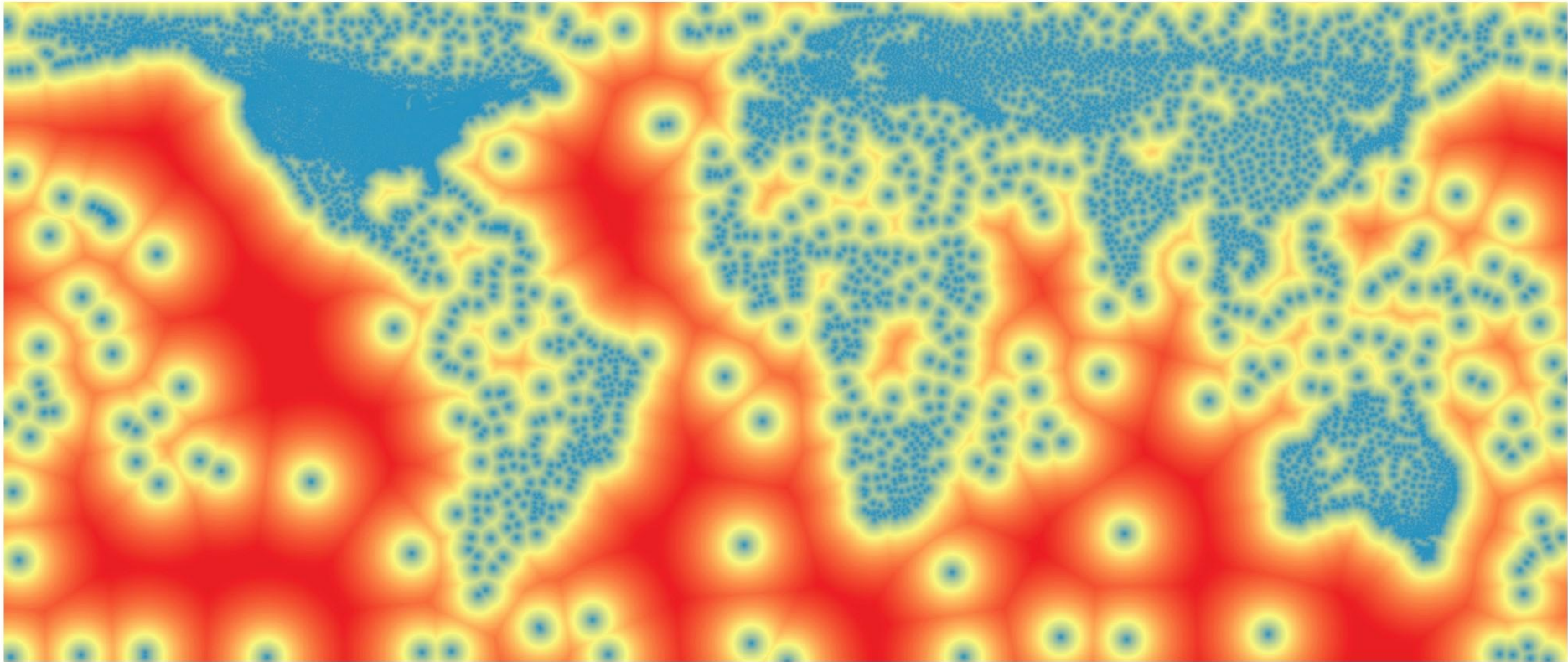
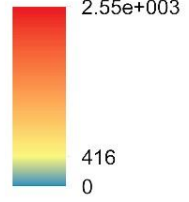
0



Legend: Distance to Nearest Temperature Station

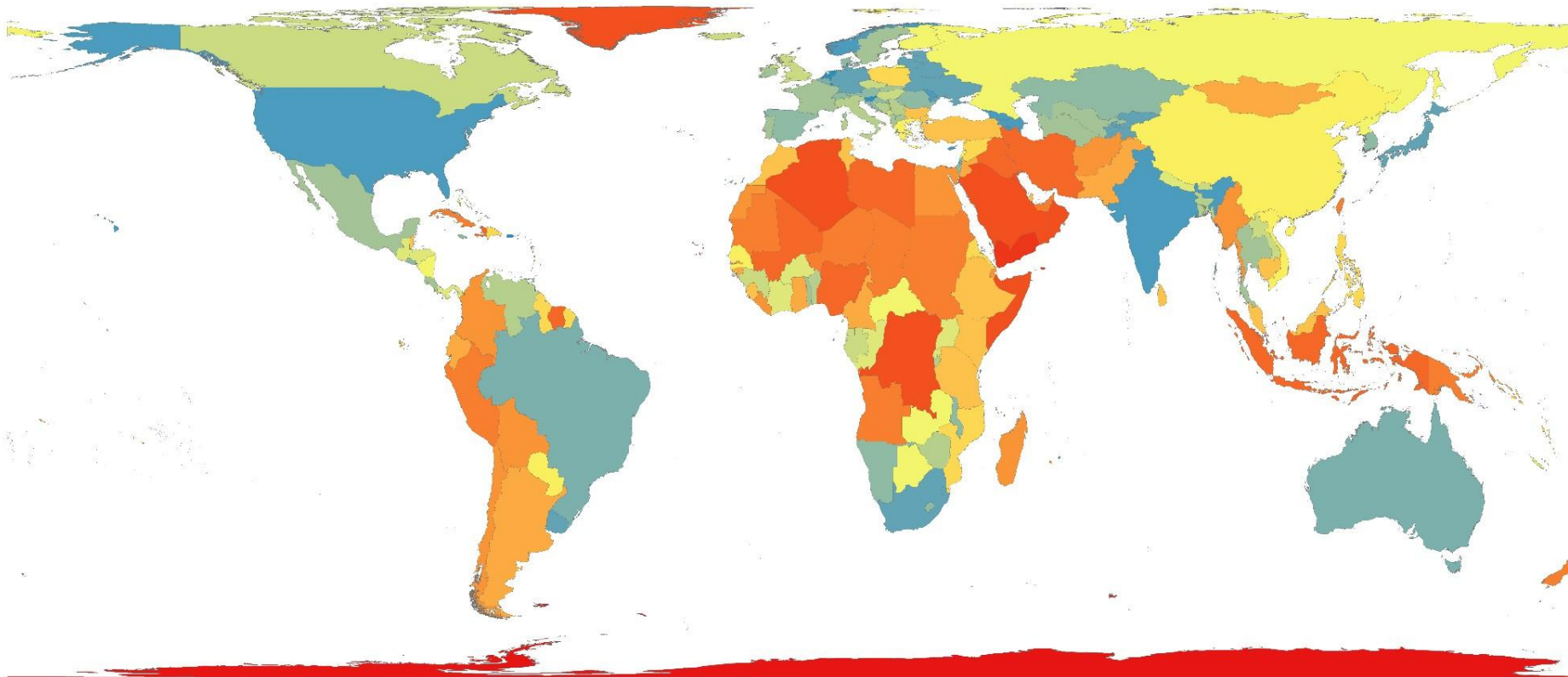
disttempnew

Value



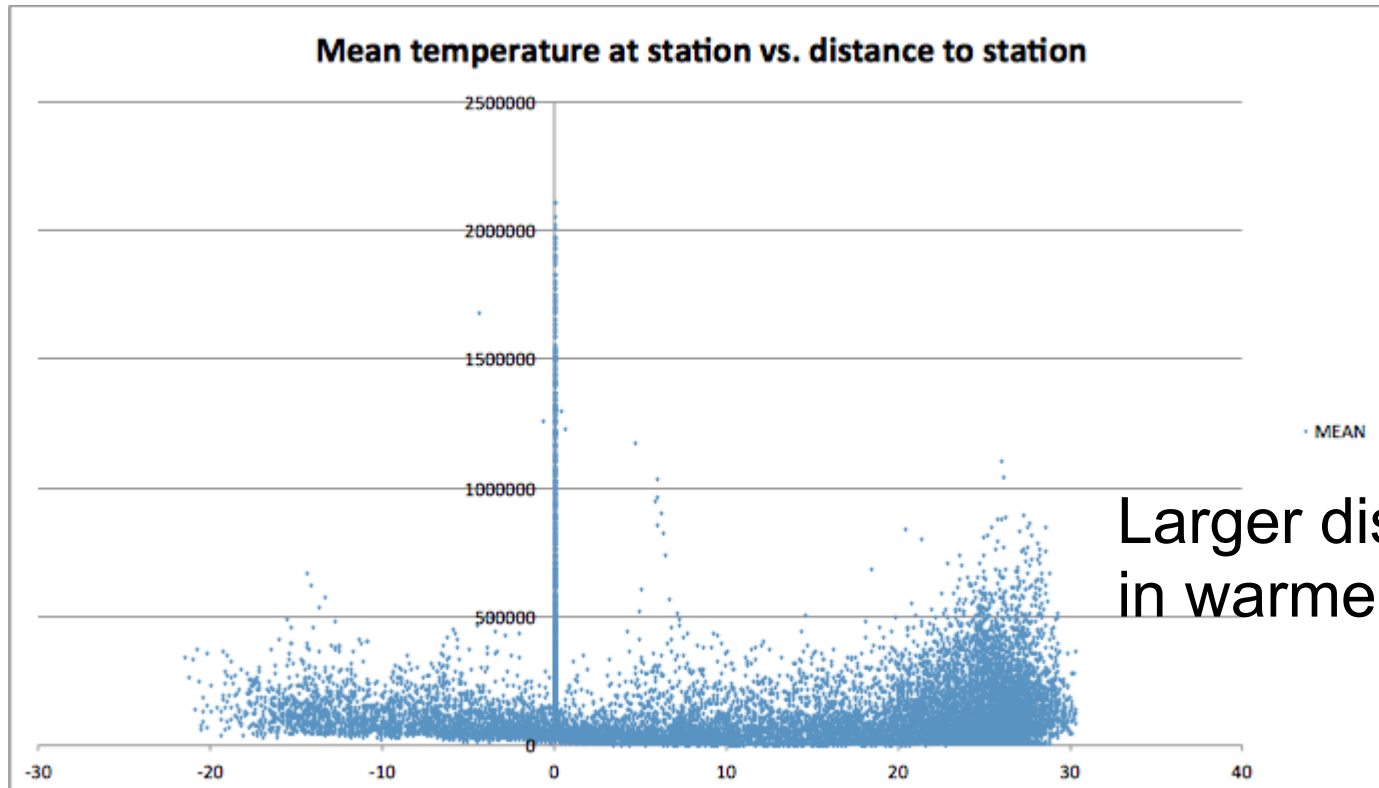
Mean distance to nearest precipitation station by country (m)

Mean Distance to Station by Country: Legend



Exploring climatic 'gaps'

Distance to nearest station



Larger distances
in warmer pixels

Mean Annual Temperature

Priorities

List of countries (and datasets)

1. Middle East

(eg. Yemen, Somalia, Saudi Arabia)

2. Central and Tropical Western Africa

(eg. Nigeria, DR Congo)

3. Western Amazonia

4. Southwestern South America






















Datasets

Building a spreadsheet of potential additional sources. See [here for updates](#)

Source Name	Citation	Website	Contact Name	Spatial Coverage	Start Year	Stop Year	Temporal Resolution
GHCN Daily	Menne, M.J., I. Durre, R.S. Vose, B.E. Gleason, and T.G. Houston, 2011: An overview of the Global Historical Climatology Network Daily Database. Journal of Atmospheric and Oceanic Technology, submitted.	http://www.ncdc.noaa.gov/daily/		Global	1832	2013	Daily
FAOCLIM 2.0	FAO. 2001. FAOCLIM 2.0. Agroclimatic Database CD-ROM + Users Manual (72 pp.) Environment and Natural Resources Working paper No. 5. Available at http://www.fao.org/nr/climpag/pub/en1102_en.asp	http://www.fao.org/nr/	René Gommès, Michele Bernard: Environment, Climate Change and Bioenergy Division (NRC), FAO, Rome, Italy; e-mail: rene.gommès@fao.org , michele.bernardi@fao.org .	Global	1960	1990	Monthly
Yasuni National Park Daily		http://www.yasuni.ec/c=1291		Yasuni Research Station	2010	2012	Daily
USHCN		http://www.ncdc.noaa.gov/		Global	1950	2013	Monthly
R-HYDRONET	Vorosmarty, C., Jauregui, C., Donoso, M., no more citation information found on site	http://www.r-hydronet.sr.unh.edu/		Regional; Caribbean and South America	1967	2013	Monthly
NordKlim	Mentioned in Hijmans et al 2005	http://www.smhi.se/eng/page=dataset		Regional; Nordic Countries	1890	2001	Monthly

Comments, suggestions?

Number of Stations per Country (normalized for area): Legend

Countries_to_Stations	 0.000001498 - 0.000004761	 0.00001290 - 0.00001952	 0.00004730 - 0.00007021	 0.0001334 - 0.0002700	 0.0009359 - 0.001718	 0.005714 - 0.01507	 0.09947 - 0.6237
Sum_Count / SQKM	 0.000004762 - 0.000009151	 0.00001953 - 0.00002958	 0.00007022 - 0.0001003	 0.0002701 - 0.0005452	 0.001719 - 0.002276	 0.01508 - 0.03165	 0.03166 - 0.09946
	 0.000000000 - 0.000001497	 0.000009152 - 0.00001289	 0.00002959 - 0.00004729	 0.0001004 - 0.0001333	 0.0005453 - 0.0009358	 0.002277 - 0.005713	 0.03166 - 0.09946

