



EARTH HACKS X URBAN CANOPY HACKATHON

USING ECOSTRESS DATA
KATIE PATRICK AND SANJANA PAUL

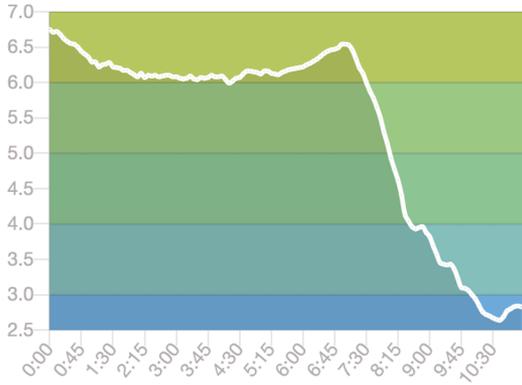
WOULD A THERMAL PHOTO
ENCOURAGE GREEN ACTION?



California's grid is currently producing

2.8

Kilotons CO₂ per hour



See today's special action

Data from CAISO

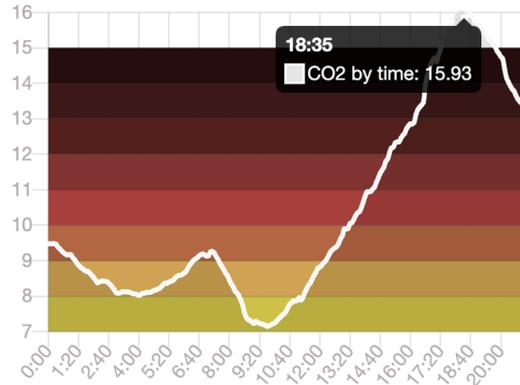
Join the revolution at energylollipop.com



California's grid is currently producing

13.2

Kilotons CO₂ per hour



See today's special action

Data from CAISO

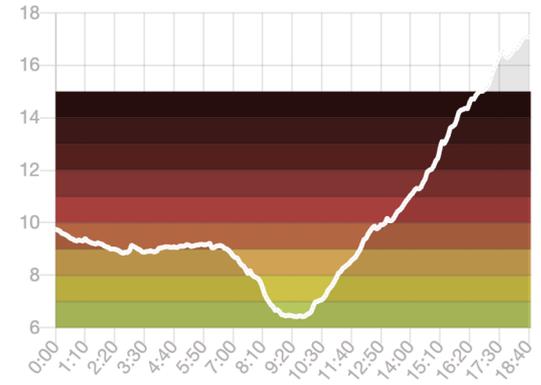
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California's grid is currently producing

17.1

Kilotons CO₂ per hour



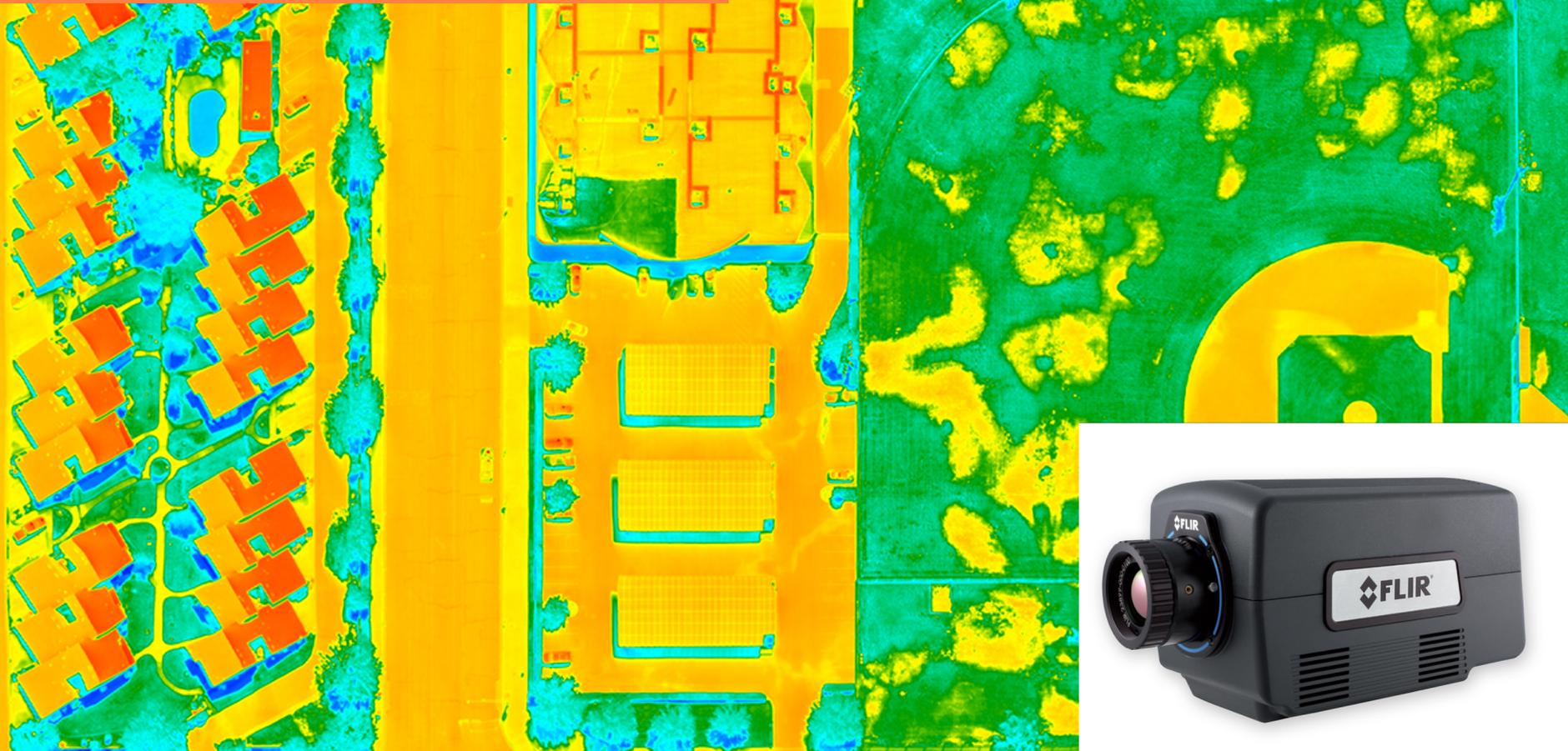
See today's special action

Data from CAISO

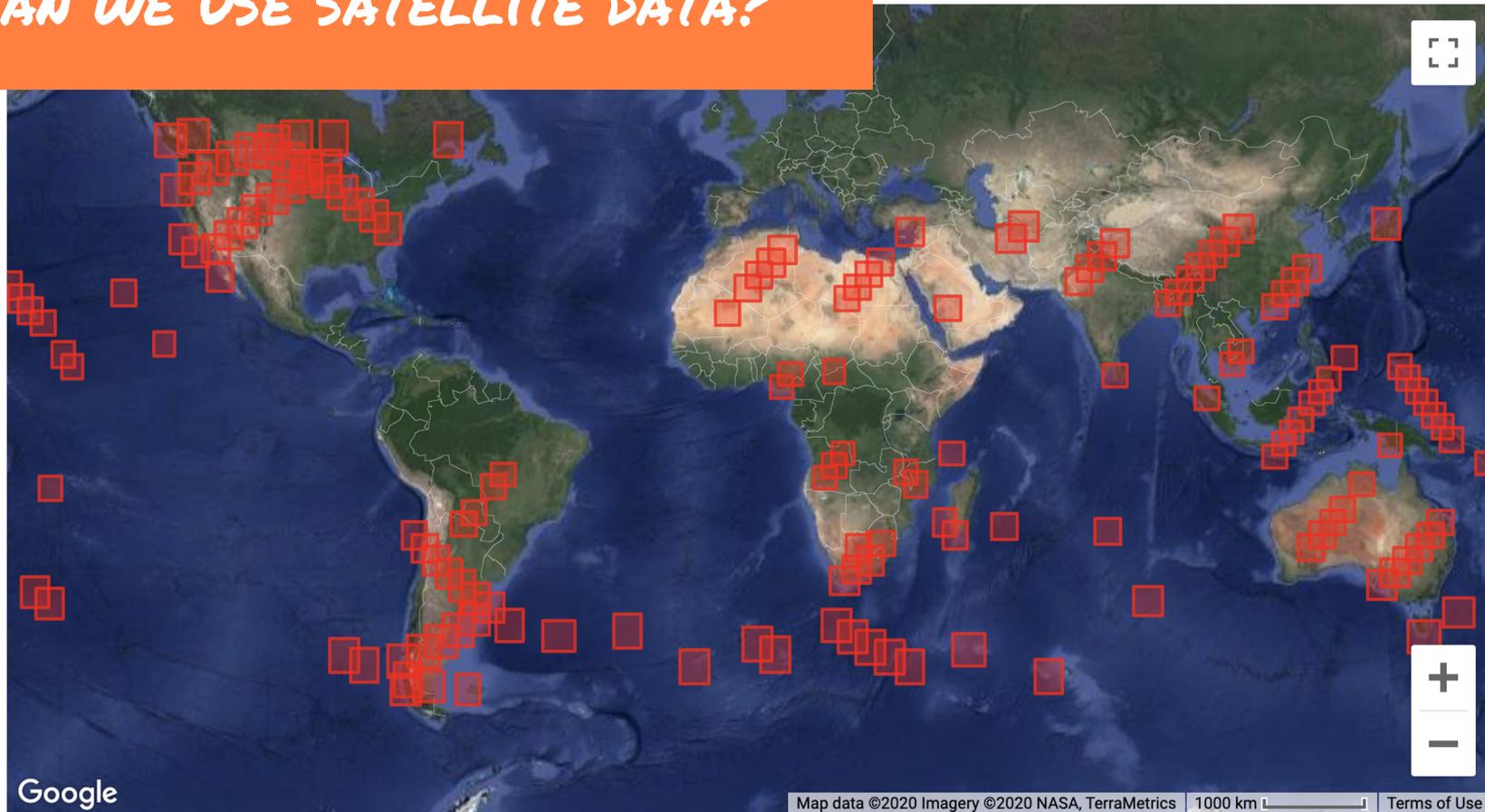
Join the revolution at energylollipop.com



CAN WE USE AIRCRAFT?



CAN WE USE SATELLITE DATA?



Select Day



(available data: 19 July 2018 to present)

Hide Bounding Boxes

WHAT ABOUT RESOLUTION?



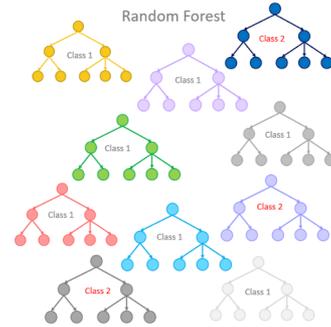
ECOSTRESS

+



LANDSAT 8

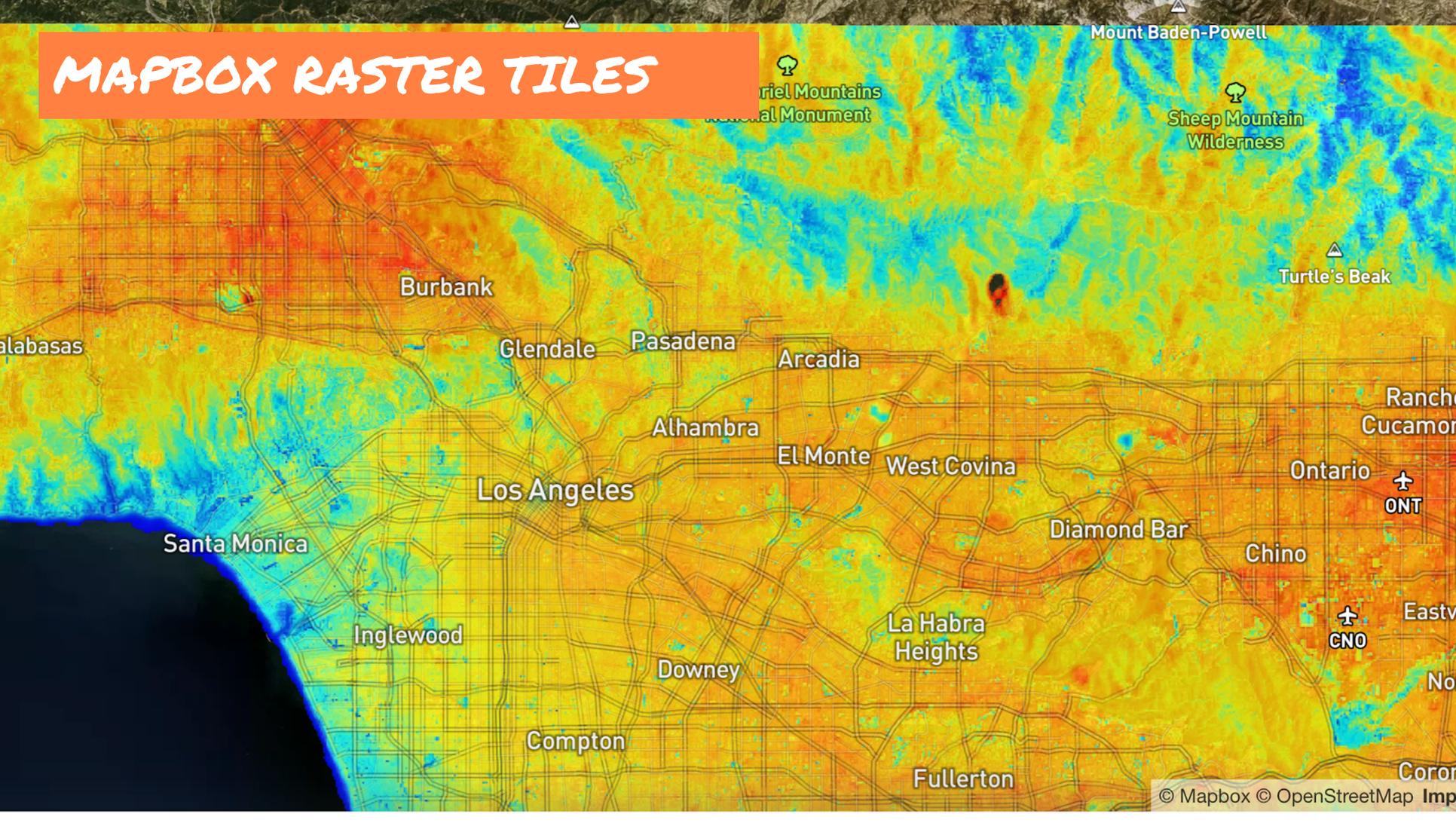
+



=

**30
m/px**

MAPBOX RASTER TILES



Mount Baden-Powell

San Gabriel Mountains
National Monument

Sheep Mountain
Wilderness

Turtle's Beak

Burbank

Glendale

Pasadena

Arcadia

Alhambra

El Monte

West Covina

Los Angeles

Ontario

Rancho Cucamonga

Santa Monica

Diamond Bar

Chino

Inglewood

La Habra Heights

Downey

Compton

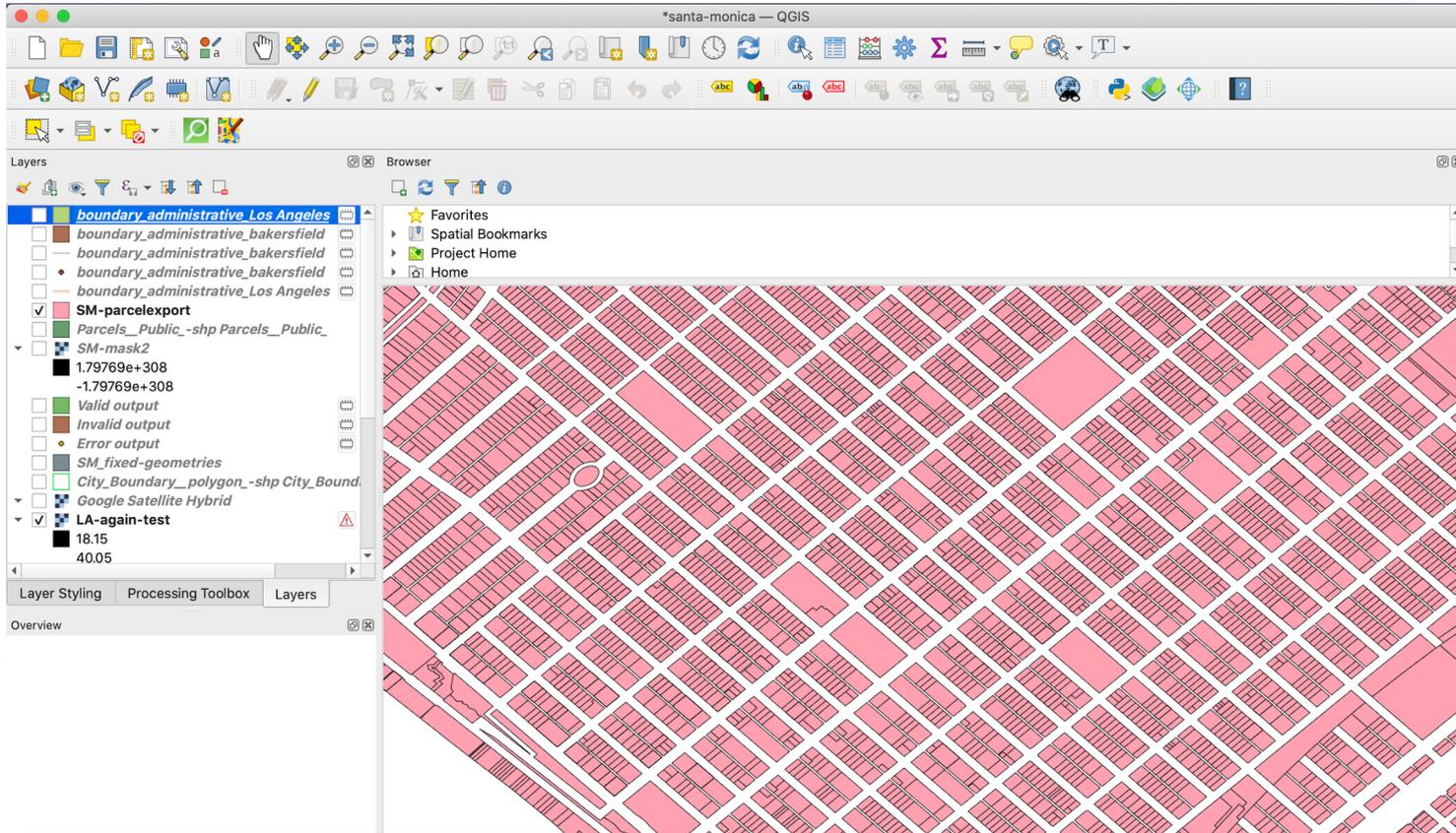
Fullerton

Eastvale

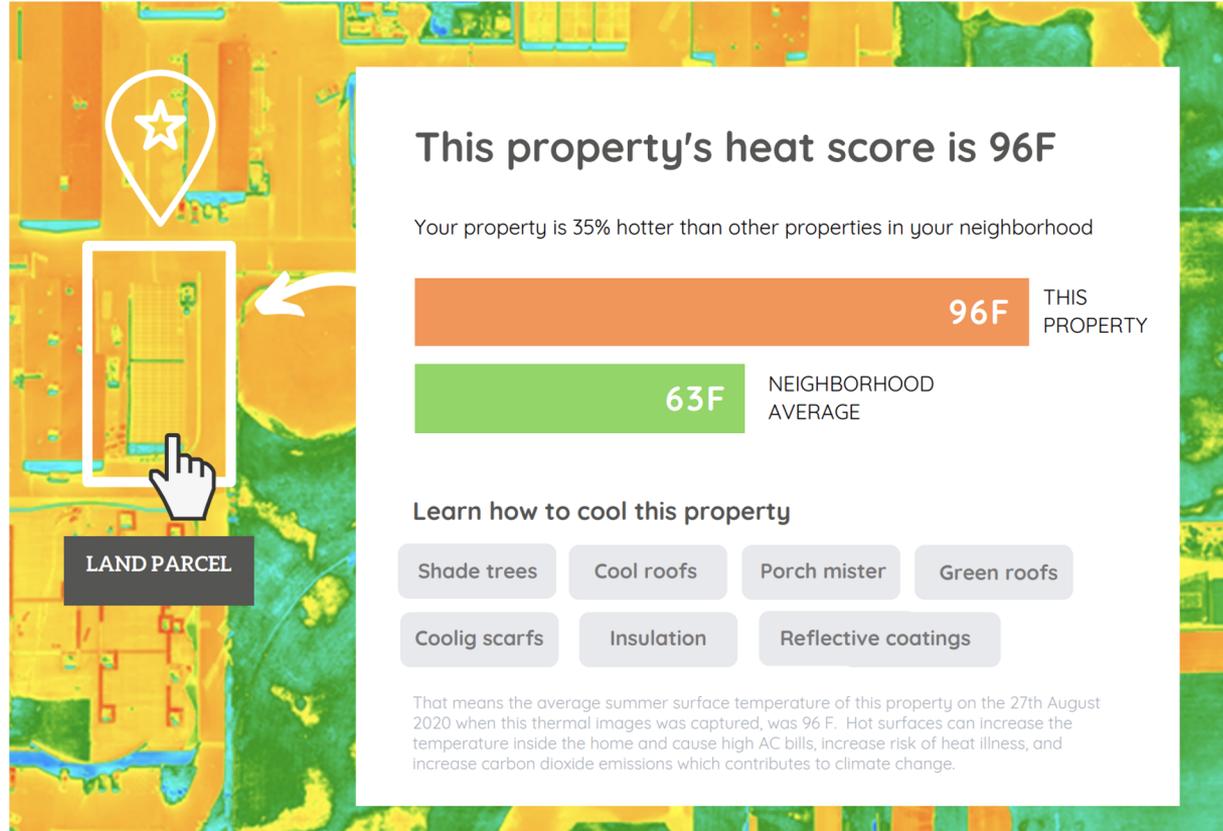
CNO

Corona

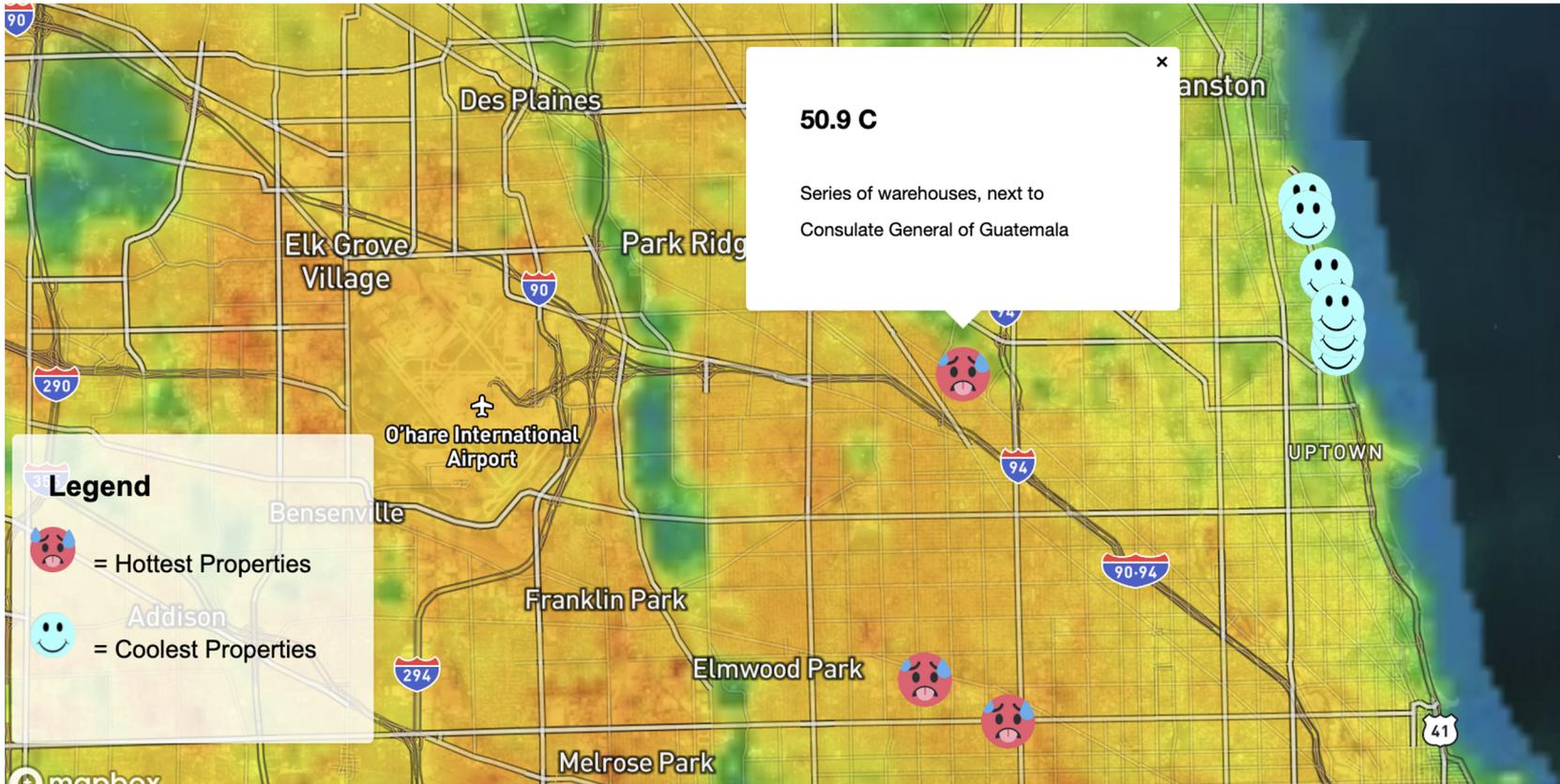
TEMPERATURE VALUES PER LAND PARCEL



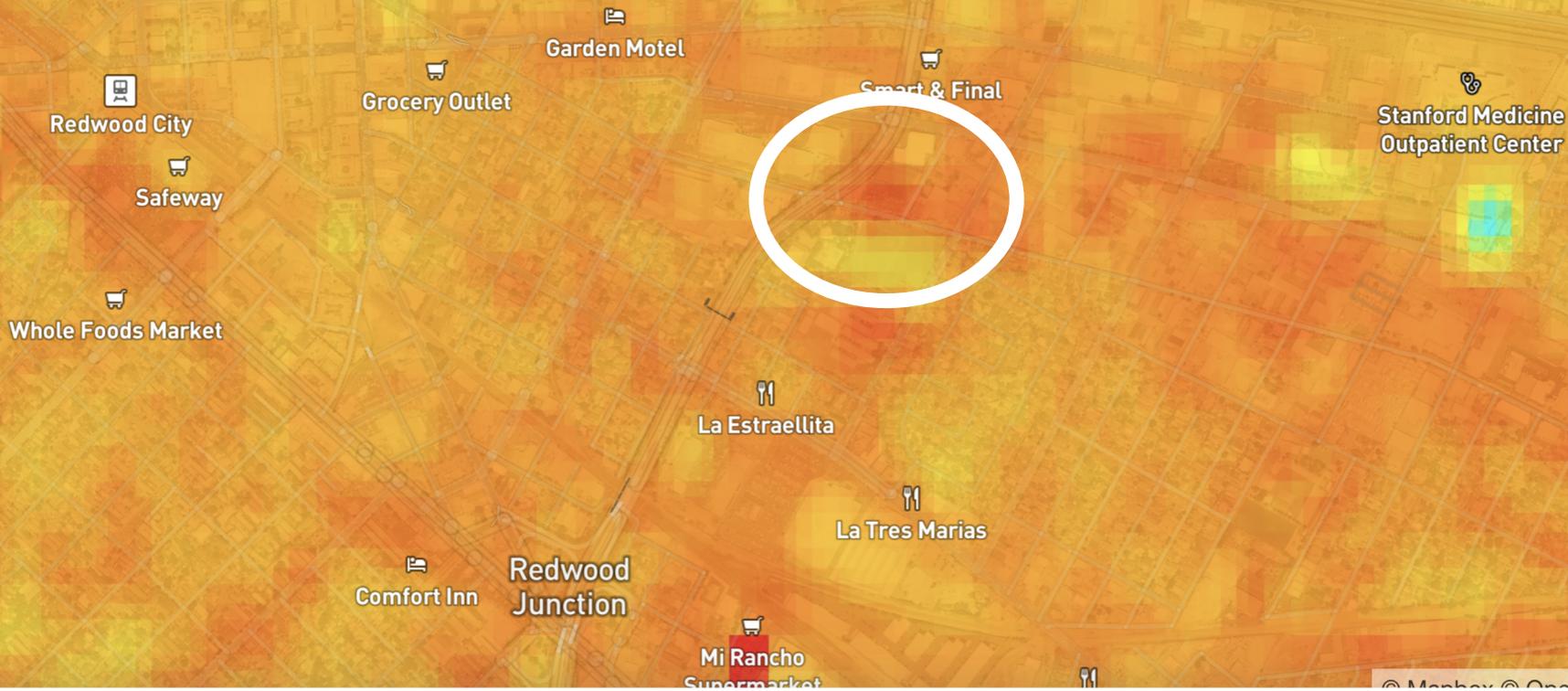
BEHAVIORAL PSYCHOLOGY - COMPARISON!



ADDING GAMIFICATION



WHAT IS THIS RED SPOT?



A GIANT BLACK ROOF!

US Bank:
Jennifer Piccinini

Hoover Park
Sports courts
& swimming
pools



Parking

2100 Spring St, Redwood City, CA ...

37.483833, -122.214888



AN OUTLIER IN A SEA OF LIGHT ROOFS



WHAT ABOUT THIS RED + GREEN SPOT?



↓E
Van Nuys
Middle School

11
PizzaRev

🛒
Ralphs

A SCHOOL PARKING LOT VS GRASS FIELD



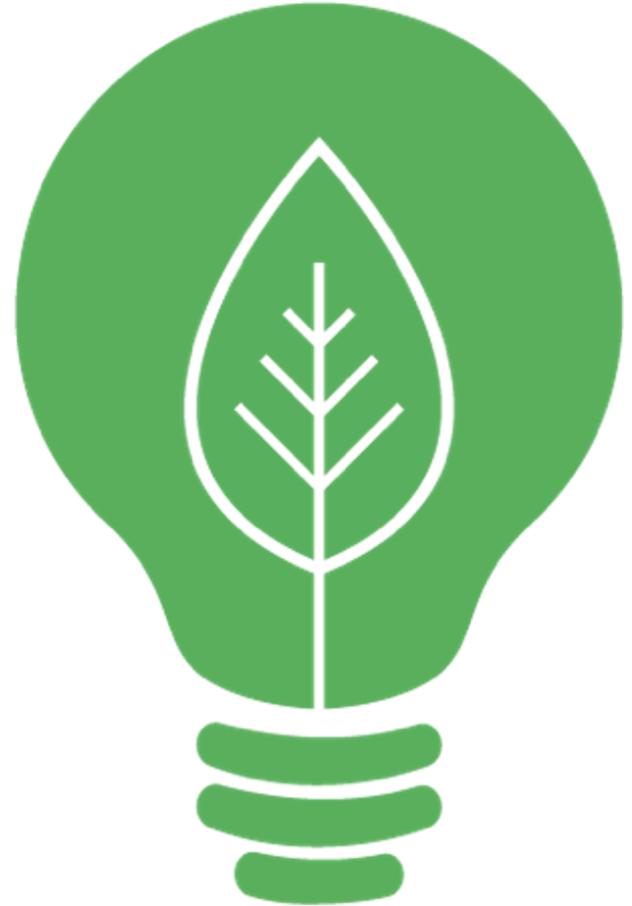
Hackathon by Earth Hacks + Urban Canopy

Let's map the world's urban heat islands

[Sign up to the challenge](#)

EARTH HACKS

- HACKATHON INNOVATION MODEL
- INTERDISCIPLINARY ENVIRONMENT
- ACCESS TO RESOURCES
- EDUCATION
- FOCUS ON ENVIRONMENT JUSTICE



THEORY OF CHANGE

Climate Change

- HACKATHONS ARE GOING TO HAPPEN ANYWAYS
 - LET'S MAKE THEM ENVIRONMENTAL
- FOCUS ON STUDENTS
 - EQUIP THEM TO BECOME ENVIRONMENTAL LEADERS
- CULTURE SHIFT
 - "SHIFTING THE ENGINEERING OVERTON WINDOW"

→ not good.

Band.



WHY HACKATHONS?

- TIME SENSITIVE
- PRESSING GLOBAL PROBLEM
- DEMOCRATIC, COMMUNITY-CENTRIC PROBLEM SOLVING SPACE
- BREEDING GROUND FOR NEW IDEAS
- EDUCATIONAL FOCUS

103 PEOPLE WORKING ON 21 CITIES

Members

Q Search by name, role or team

103 members



A C ○



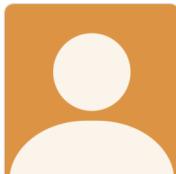
Abdul Aziz ↻



Alice Lin ●



Ana Cristina Vasquez ↻



Anamika Shreevastava ○



Anna ○

Name ↑

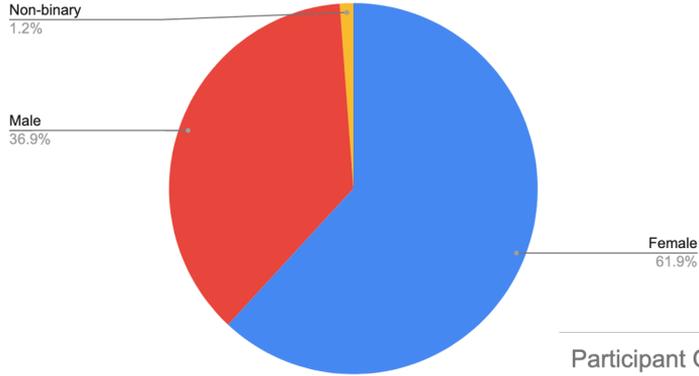
Owner

asian-team-mapping	Elton Chan
Beijing	Li Ming Tan
Berlin	Lucia Layritz
CA Central Valley, 2020.07.27	John Noble
El Chicago Fuego	Bill Yen
Hackathon Recordings	Sanjana Paul
Heaters Gonna Heat_SaoPaulo_Tampa	Trista Brophy
Houston	Edward Pettitt
LEOG_SYDNEY	Leonardo Gonzalez
Los Angeles, 2020.08.14	John Noble
Mumbai	Alice Lin
New York City	Audrey Acken

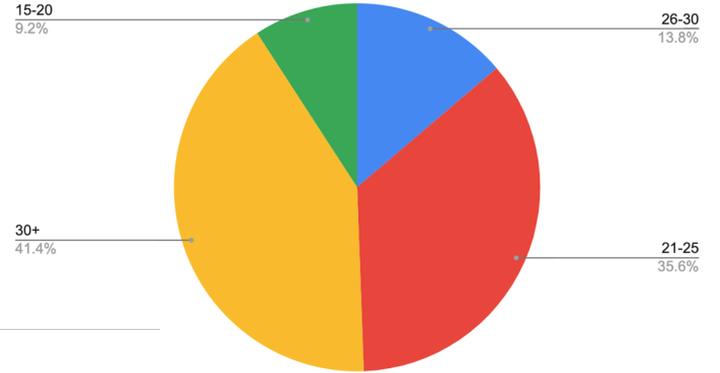
Newcastle NSW Aus	Karenne Jurd
Philadelphia	Leandra Lipat
Portland	Anna Hugney
San Diego	Drew Resnick
Seattle	Anna Hugney
Silicon Valley, 2020.08.03	John Noble
Tacoma	Phillip Carew
Team San Jose	hannahchatham
Vancouver	Lucia Layritz

ATTENDEES

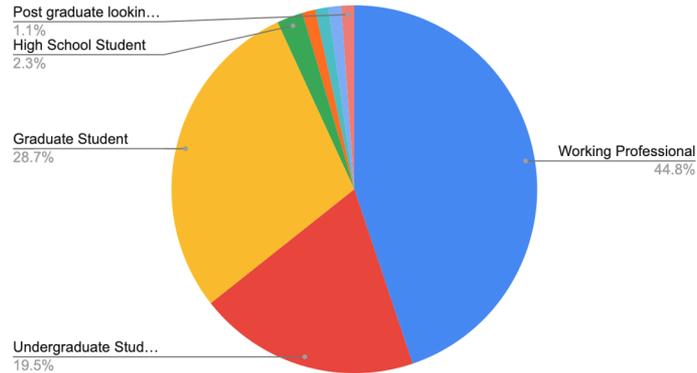
Participant Gender



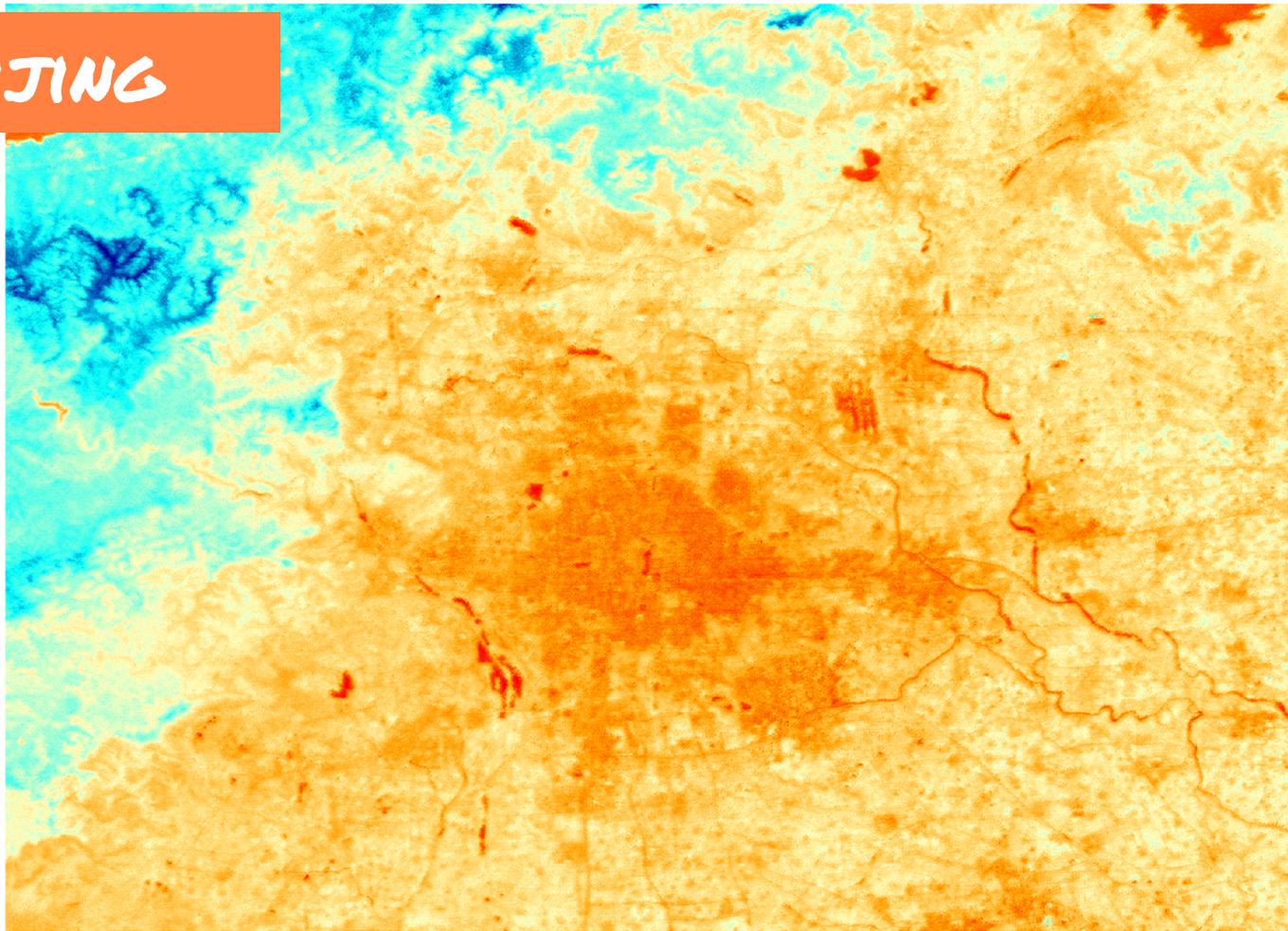
Participant Age



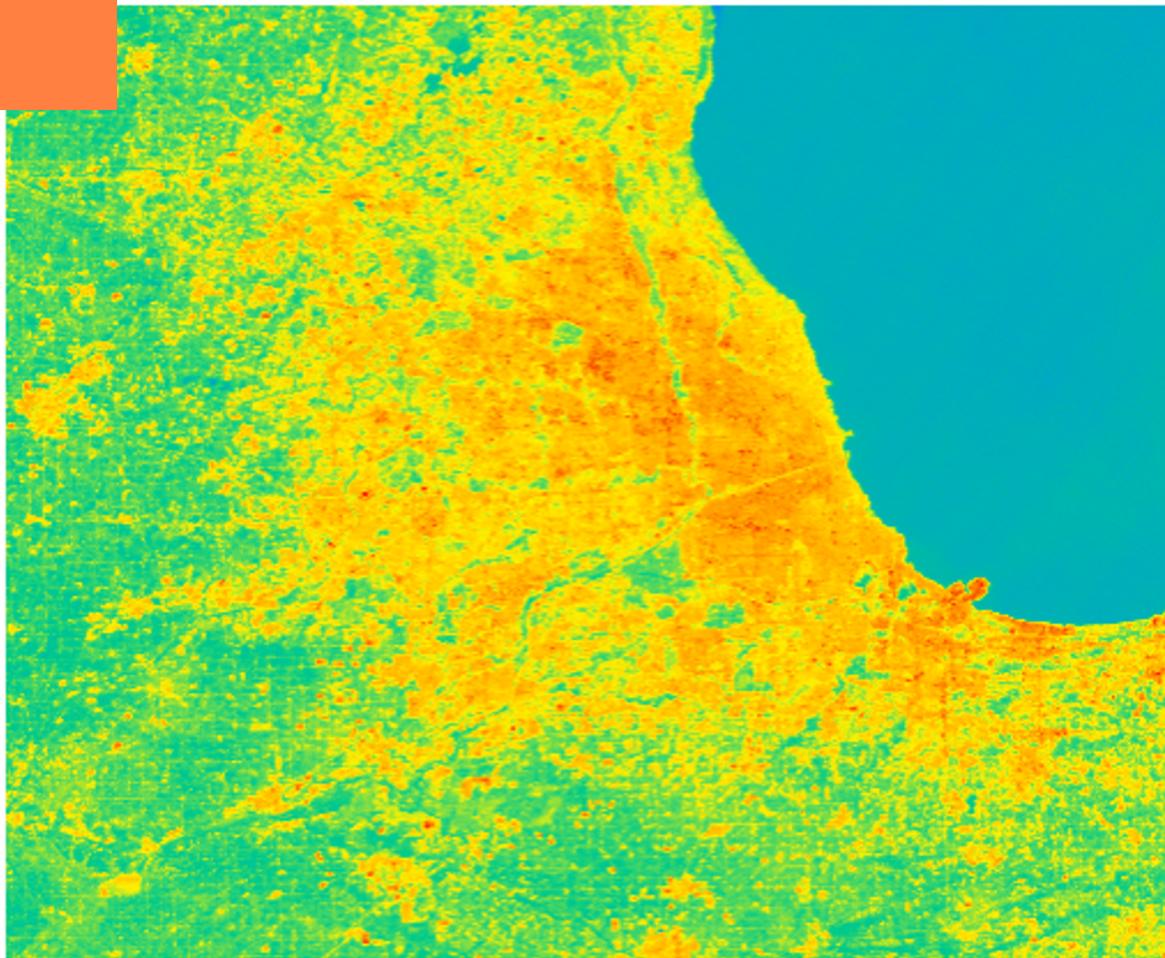
Participant Occupation



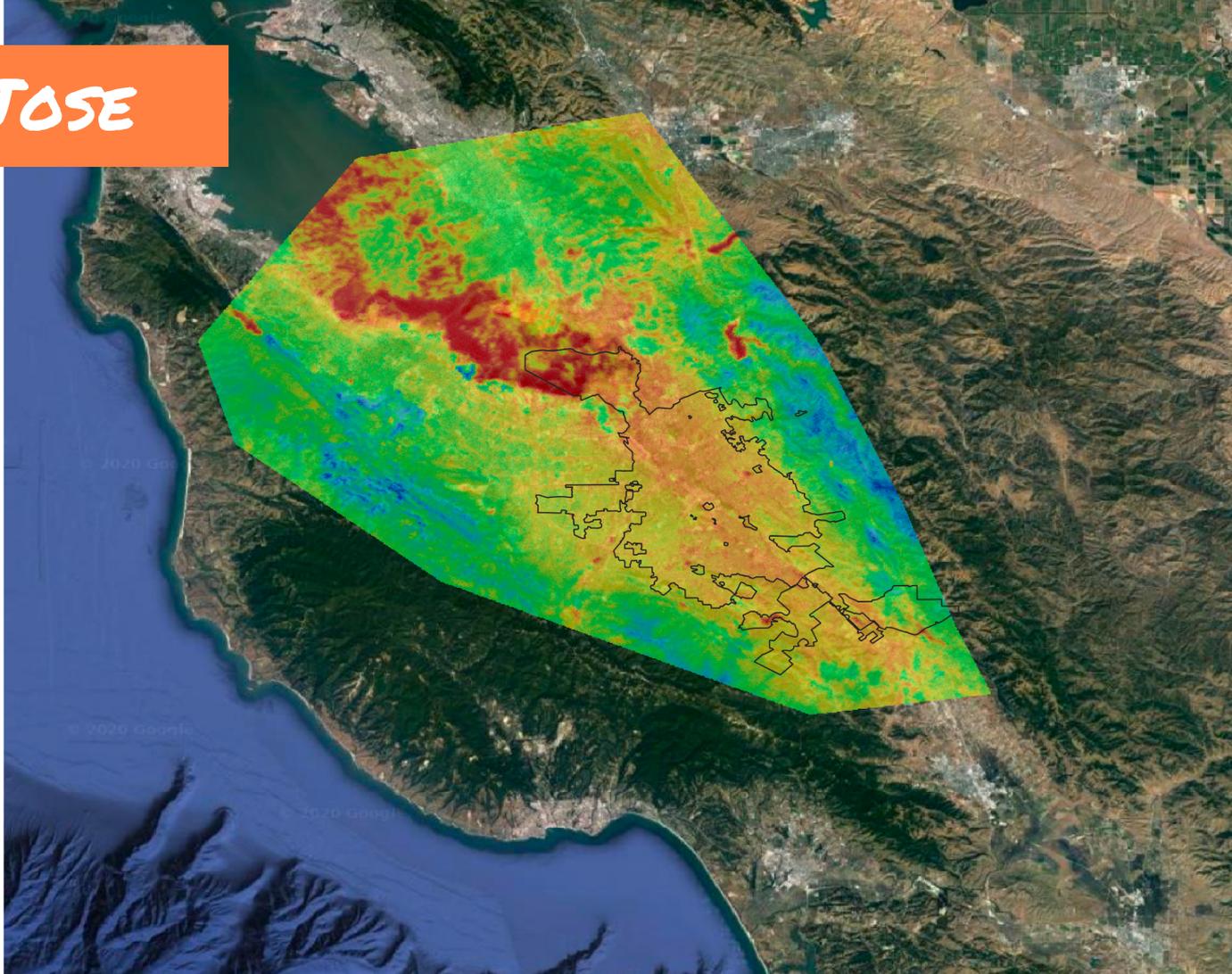
BEIJING



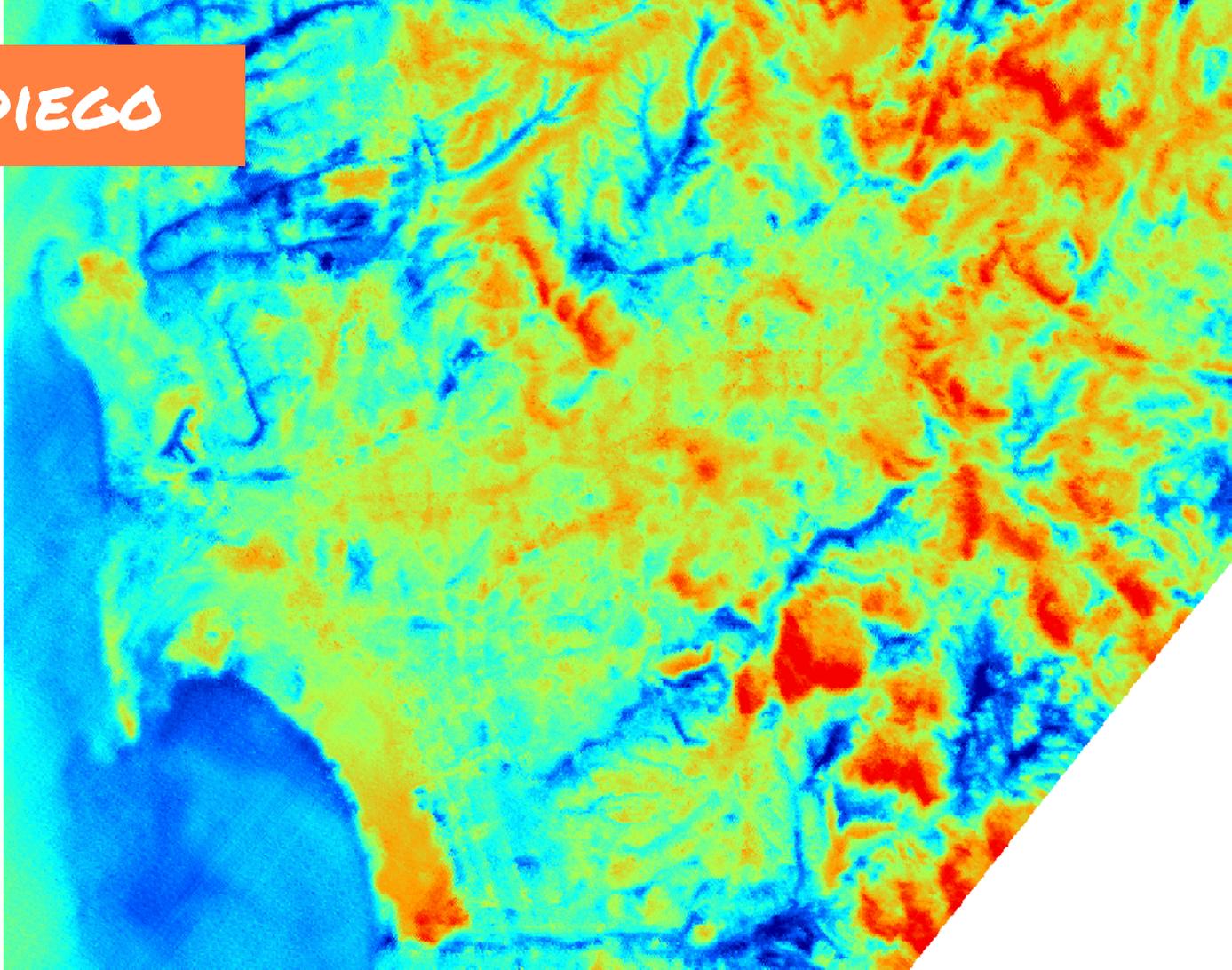
CHICAGO



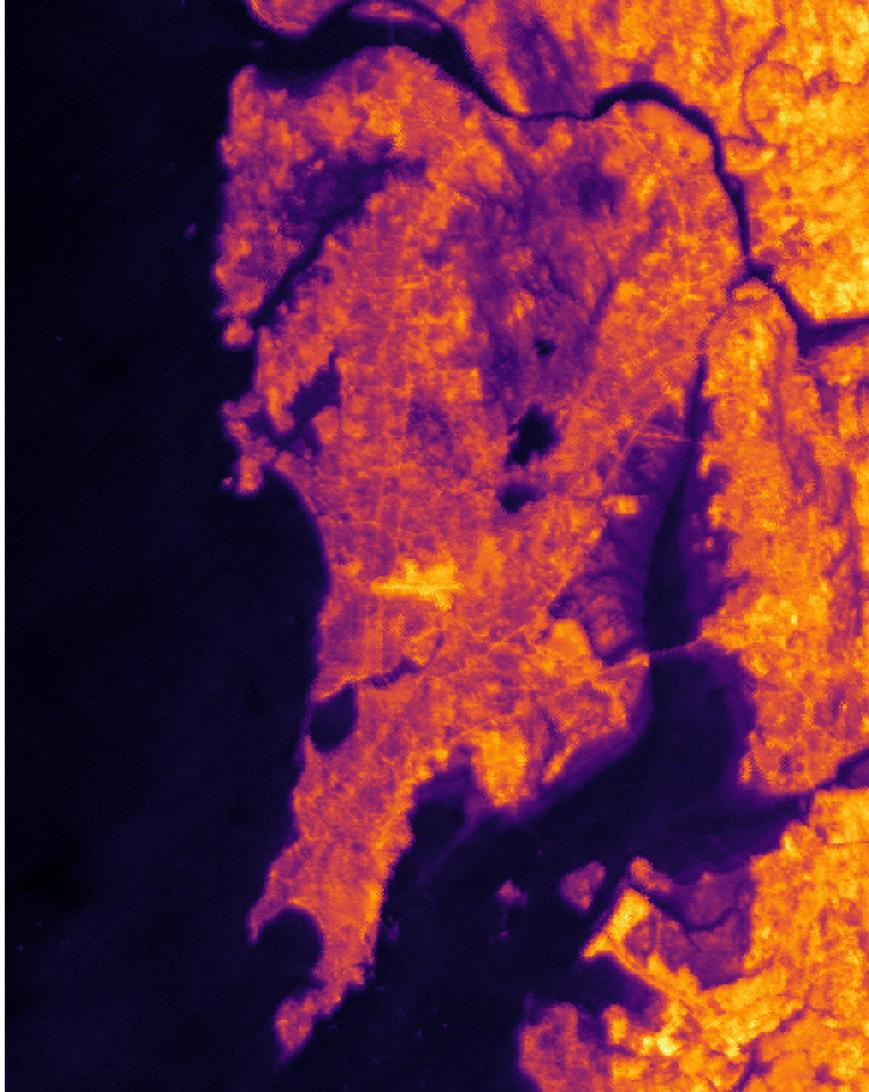
SAN JOSE



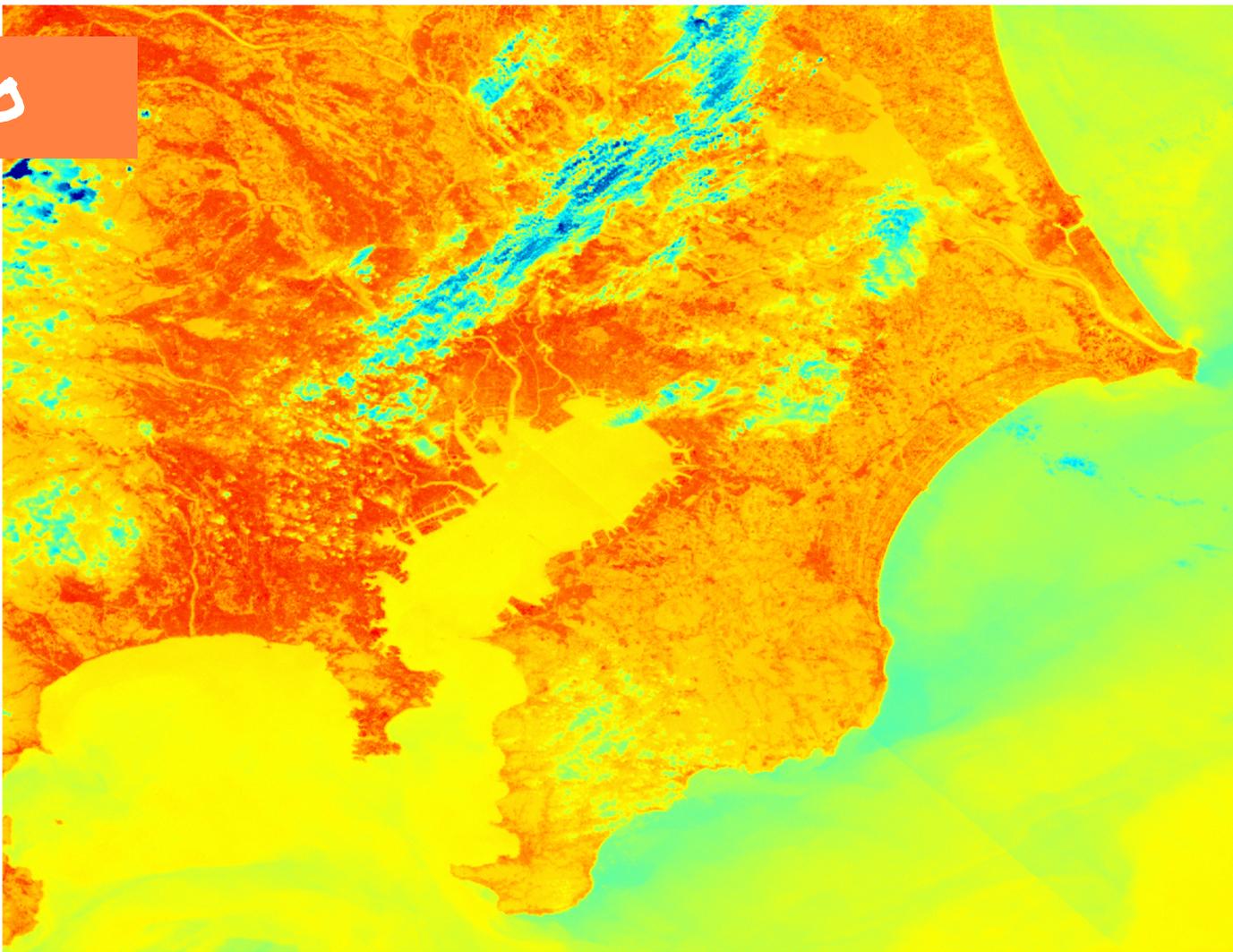
SAN DIEGO



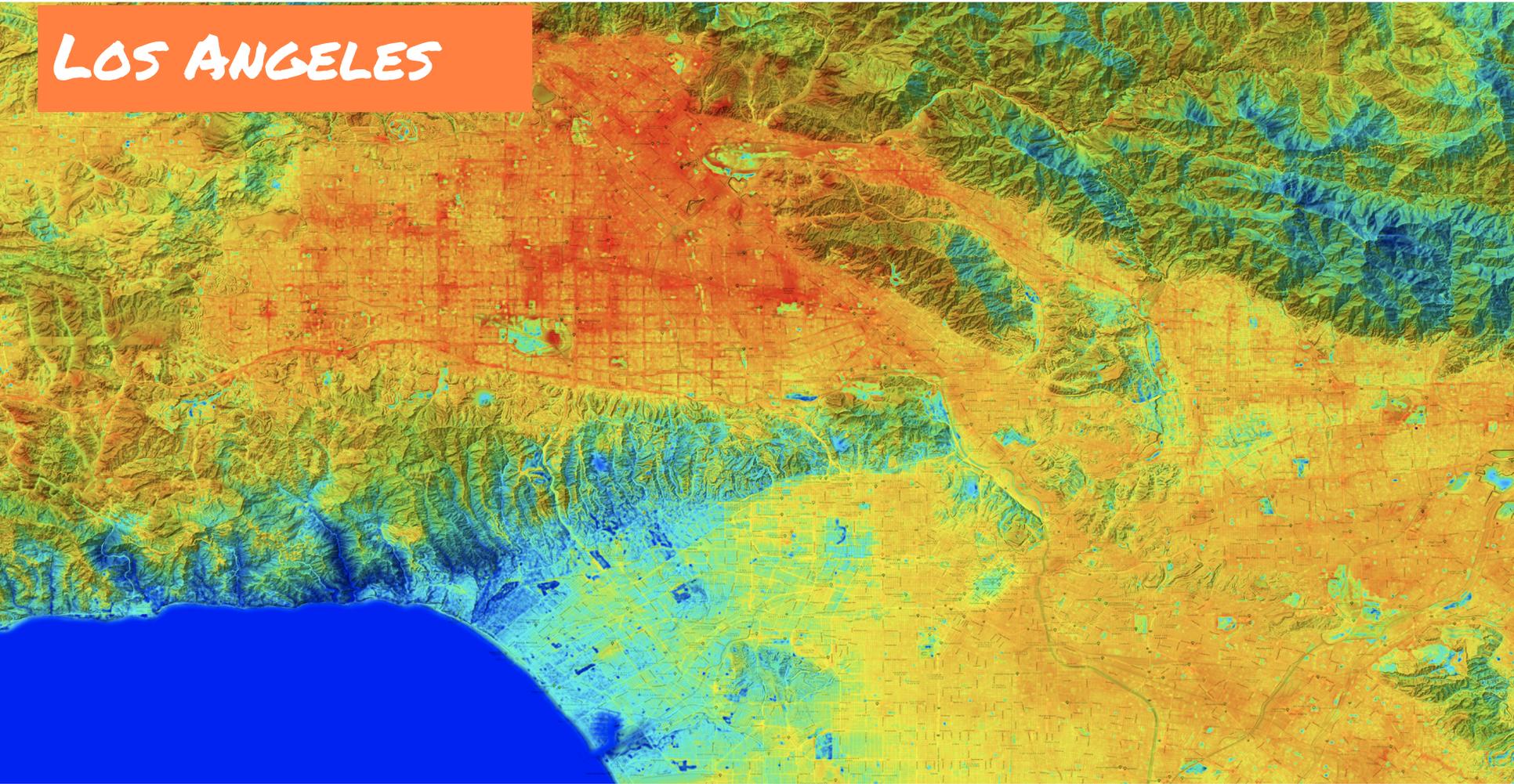
MUMBAI



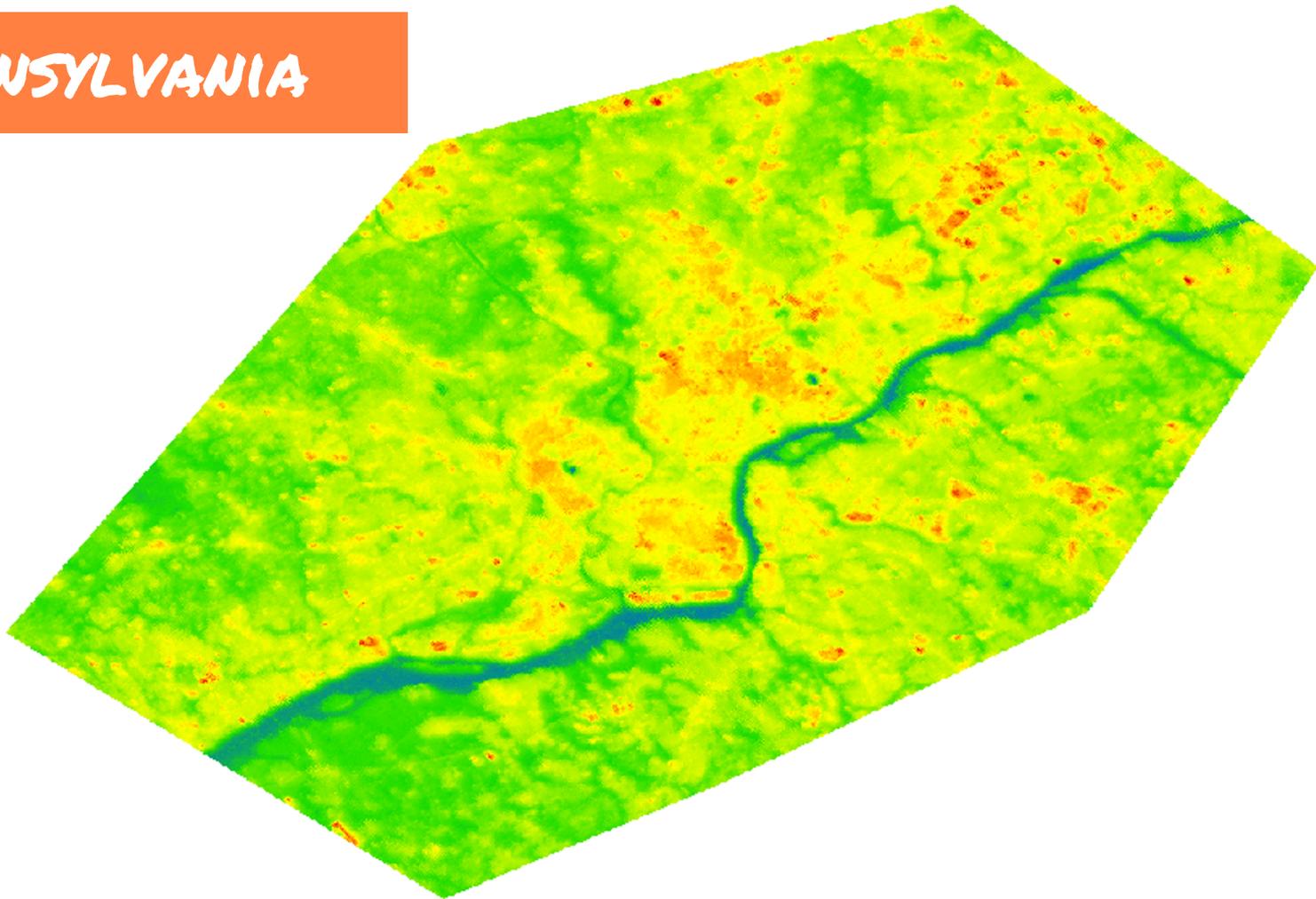
TOKYO



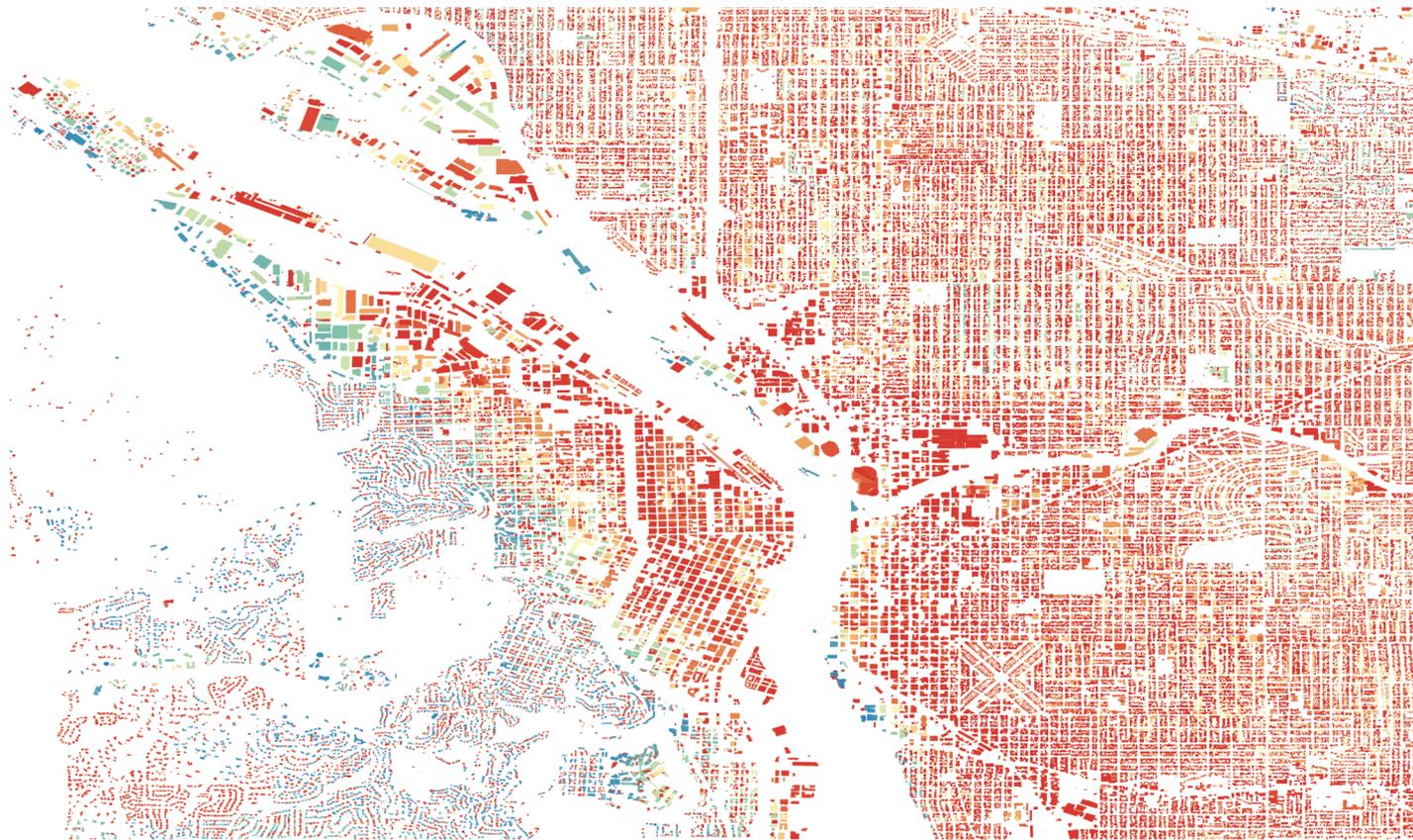
LOS ANGELES



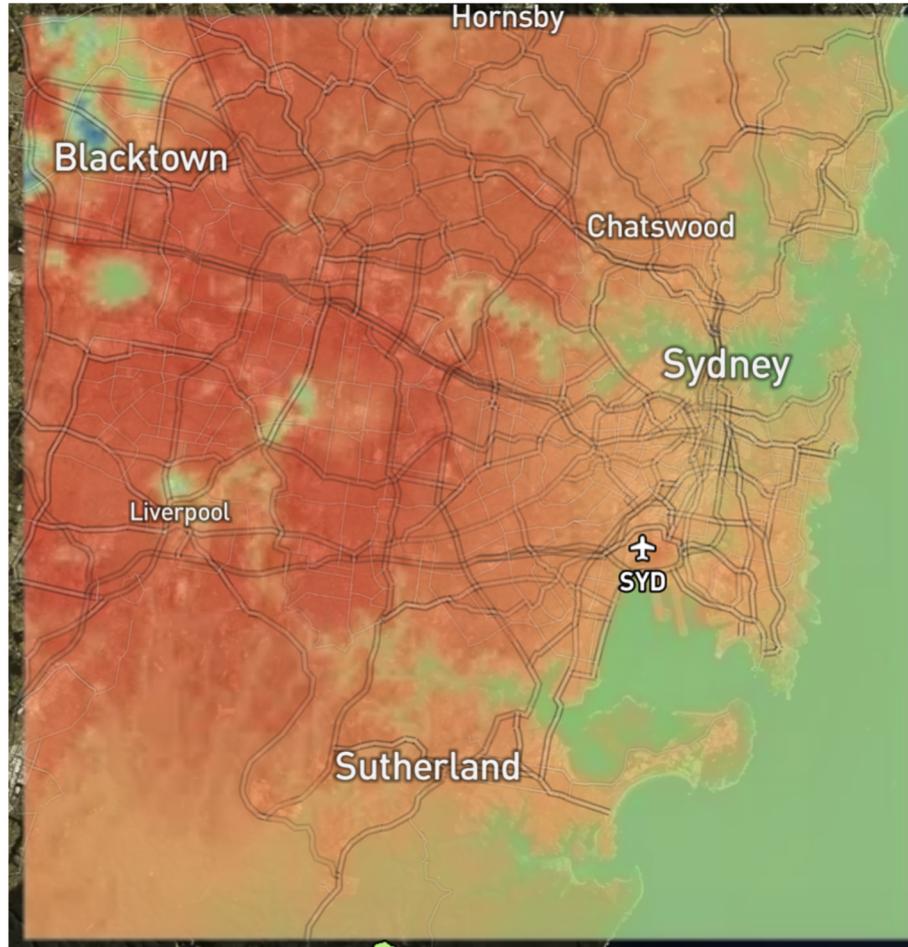
PENNSYLVANIA



PORTLAND



SYDNEY



HAPPY HACKERS



Bill Yen 9:27 PM

Hey Katie! I want to thank you again for putting together such great resources for QGIS and Mapbox. I had a lot of fun, and I learned a ton about GIS in the process. After the hackathon, I kept playing with the color of the map like you suggested and got a better color scheme than before. I was never able to upload the zoom=15 version to Mapbox because it's too large and I haven't figured out how to use the API yet, but this version seems to be fairly clear. I also made the roads transparent so you can see the outlines of the roads without disrupting the heat map. I welcome any comments/suggestions you have on this version, and if you think it looks good I can replace our existing file with this:

From [kimlandsbergen](#) to [Everyone](#): 3:25 PM

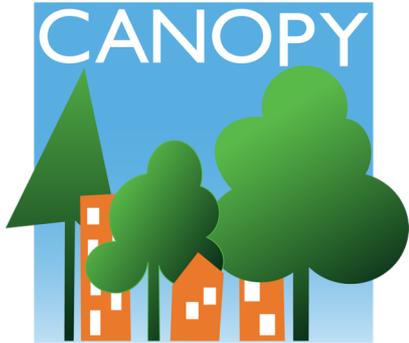
This hack was wonderful, I will continue working on this low-gear but constant speed :) I am a tree commissioner in my city, and do a lot with urban forestry. Images like these will be powerful for people to see and understand (re) future climate change impacts. This project connects some major circles in my life. I will stay involved.



Prajna Soni • 12:56 PM

Hey Katie, I loved the Urban Heat Hackathon this weekend and would love to stay connected as I navigate the next few years in the Tech-for-Sustainability space!

INTO THE REAL WORLD

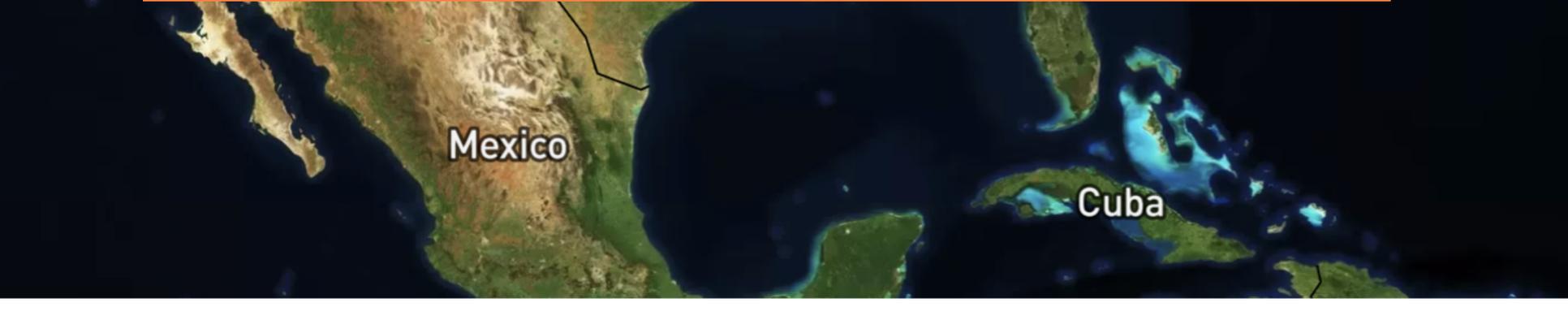


SMUD[®]

Sacramento Municipal
Utility District

A satellite-style map of North America is shown in the background. An orange rectangular box is overlaid in the center, containing white text. The text describes the next steps in a project: tidying and sharpening images, adding more cities, and combining them into a single searchable global map. The map shows state boundaries and geographical features like the Great Lakes and the Gulf of Mexico.

**NOW WE WILL TIDY + SHARPEN THE
IMAGES, ADD MORE CITIES, AND PUT
THEM ALL TOGETHER ON ONE
SEARCHABLE GLOBAL MAP**

A satellite-style map focusing on Mexico and Cuba. The word 'Mexico' is written in white text over the landmass of Mexico. The word 'Cuba' is written in white text over the island of Cuba. The surrounding ocean is dark blue, and the land is shown in natural colors with some topographic shading.

Mexico

Cuba