

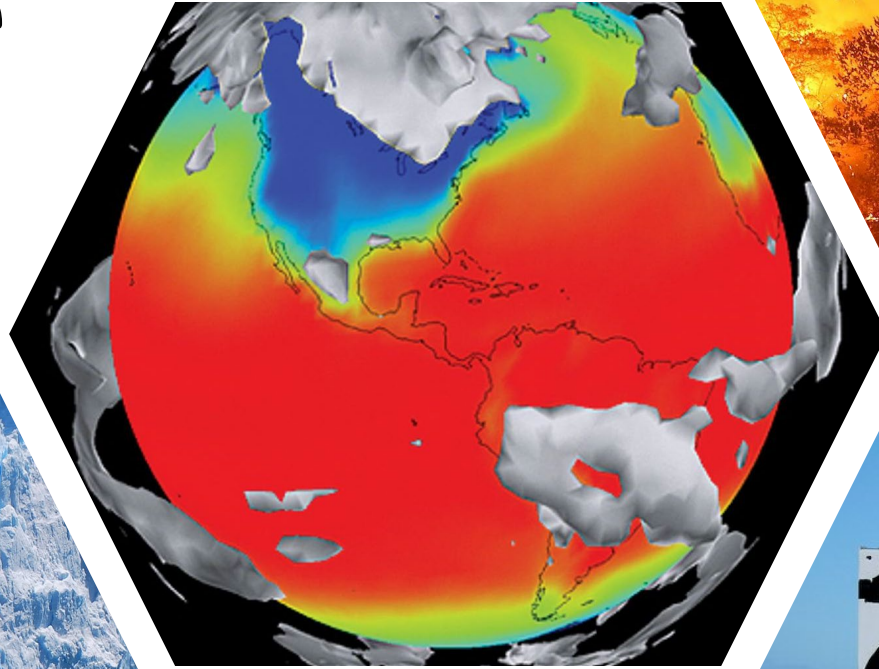
Climate Resilience: At Home, In Your Yard, and Beyond



Outline:

- What is Climate Change, and What Causes It?
- Greenhouse Effect 101
- Carbon and Climate Change
- Local Changes
- Effects on Natural Resources
- Reducing our Impact: Every Action Counts
- Q & A

Climate Change



Global Warming

vs.

Climate Change



Your results are back. It's climate change. Just how many greenhouse gases have you been consuming?

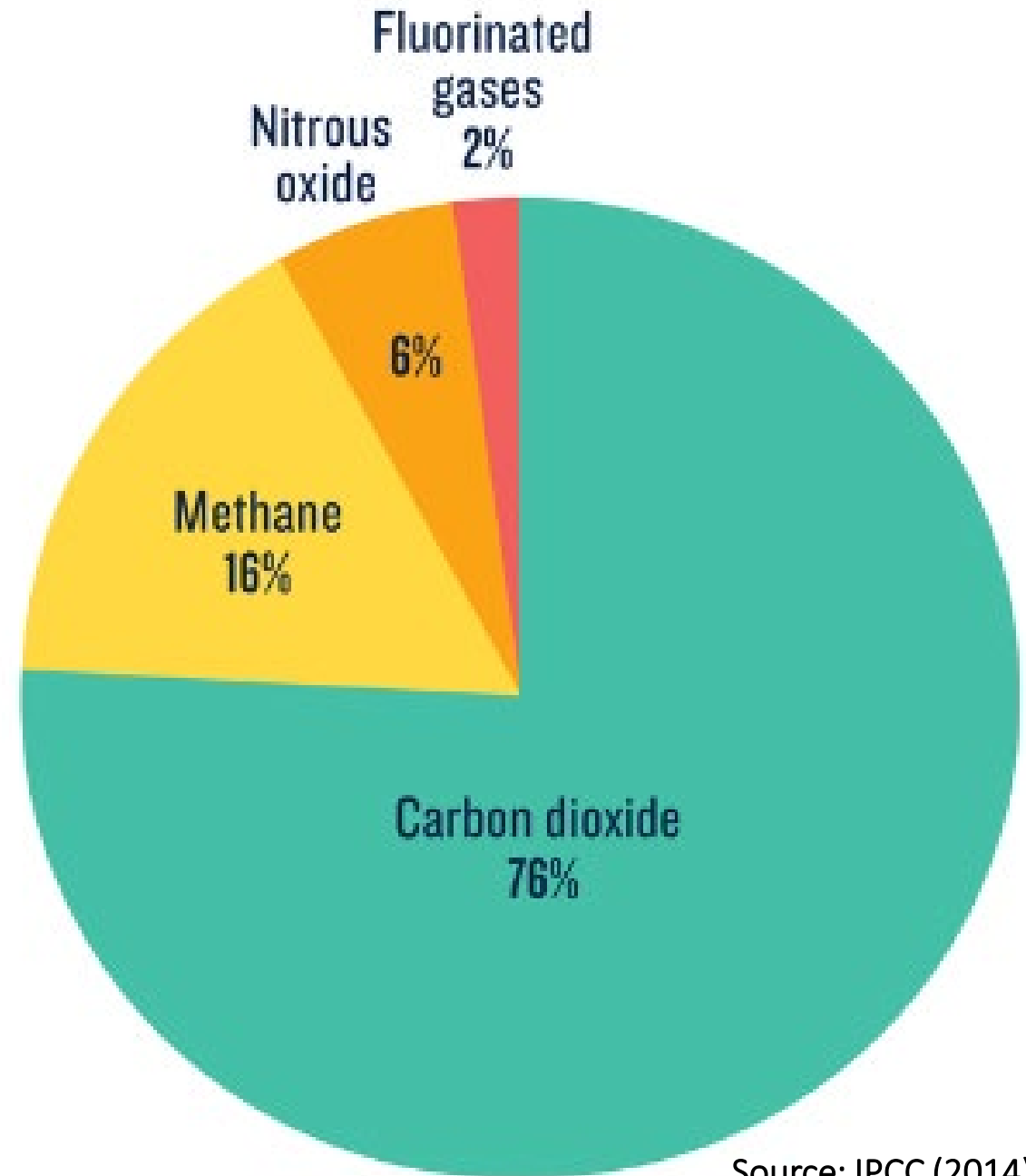
Major Causes:



Greenhouse Effect 101:



Human-caused
greenhouse gas
contributions
to total global
emissions:



Source: IPCC (2014)

Carbon: What is it?

- Natural element
- Present in all life
- Gets cycled & stored
- Stores in organisms, rocks, soils, ocean, atmosphere
- CO₂ traps sun's heat
- Essential for life



Carbon's role in climate change

More heat stored

+

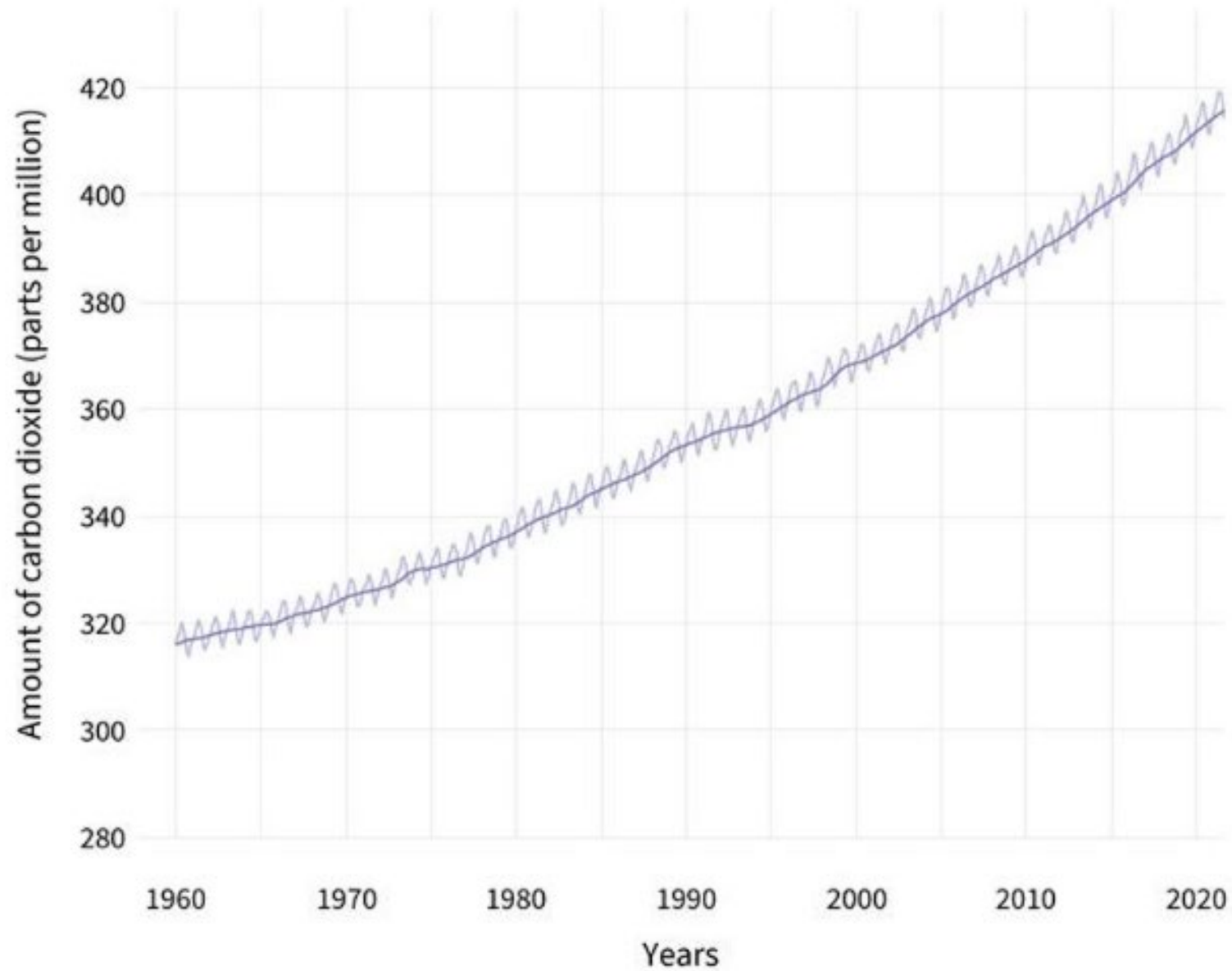
More CO₂ in air

=

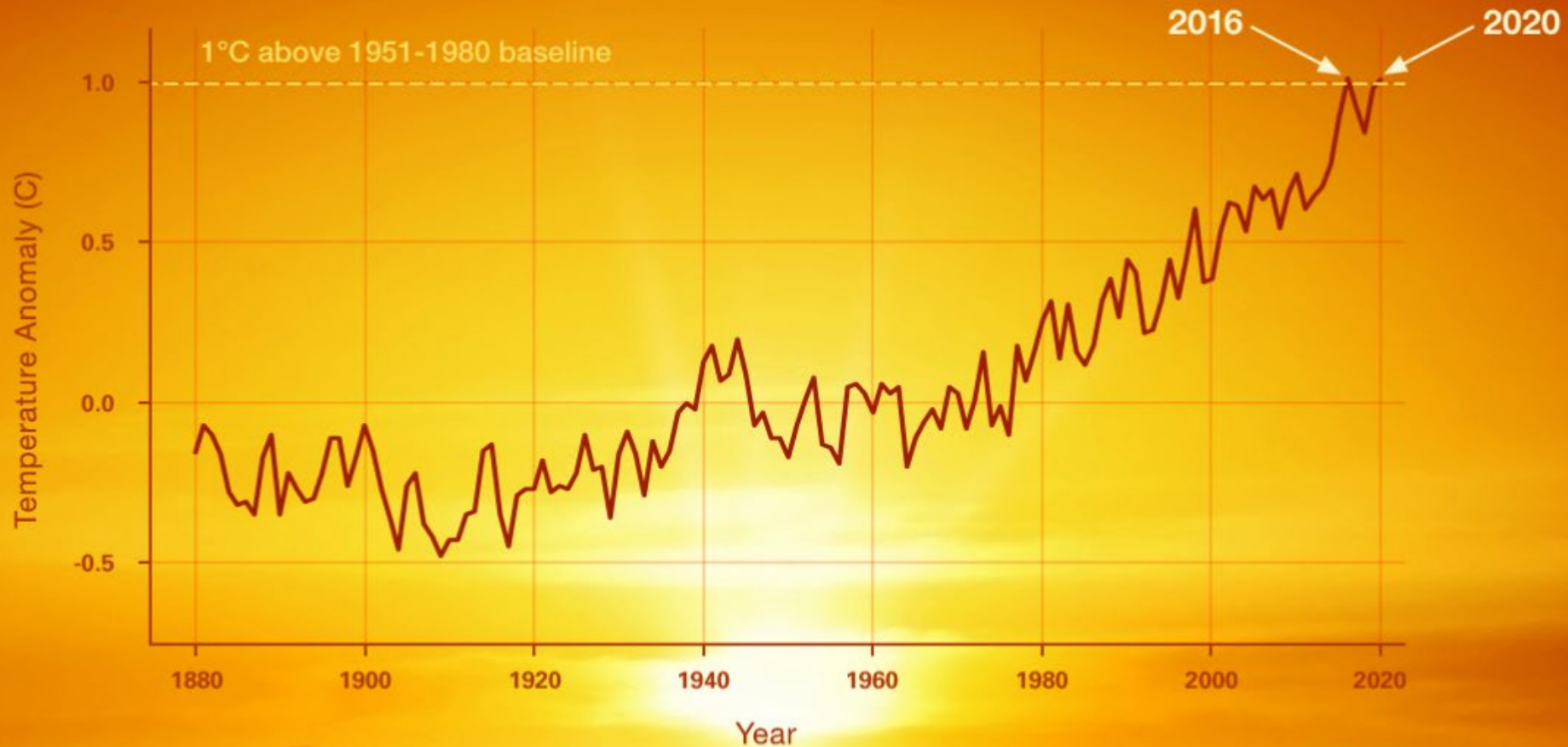
Large, rapid changes to
all planetary systems
that support life



ATMOSPHERIC CARBON DIOXIDE (1960-2021)



Change in GLOBAL surface temperature:



Local changes:

**Warmer
Temperatures**



**More
Unpredictable
Precipitation**



Question:

What recent, local natural disaster killed more people than the Vanport Flood (15) and Mt. St. Helens (57)?

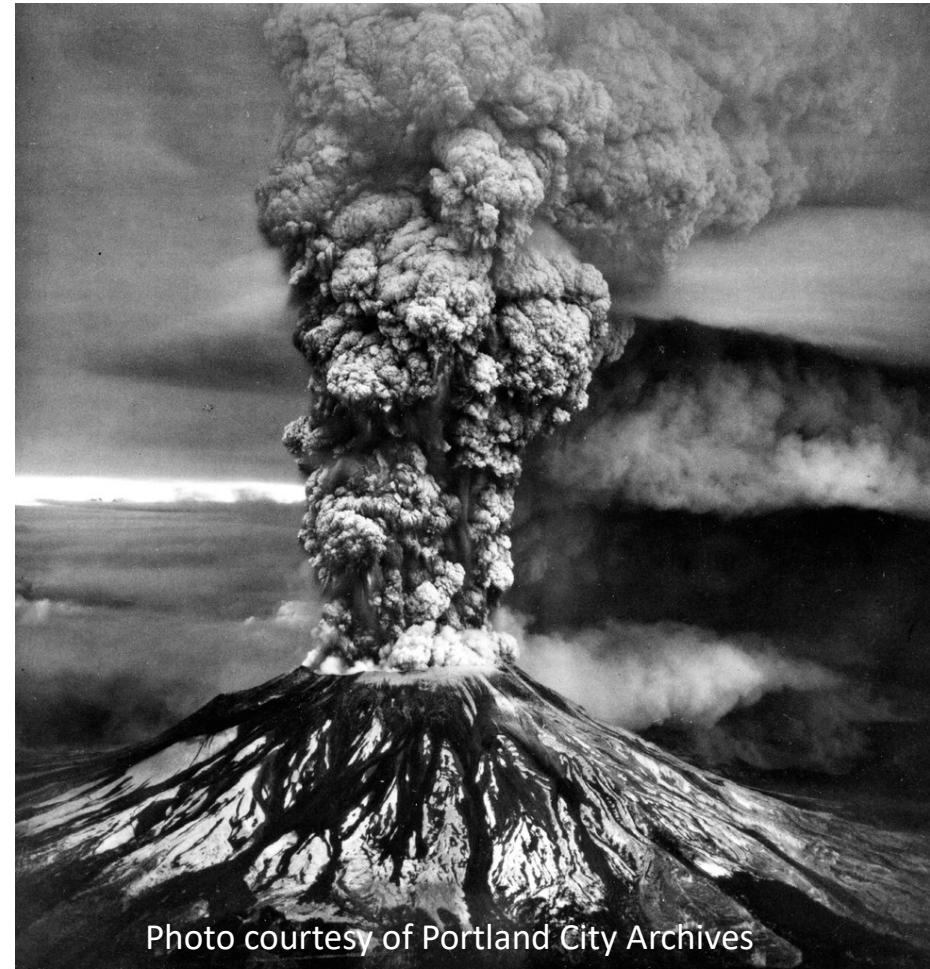
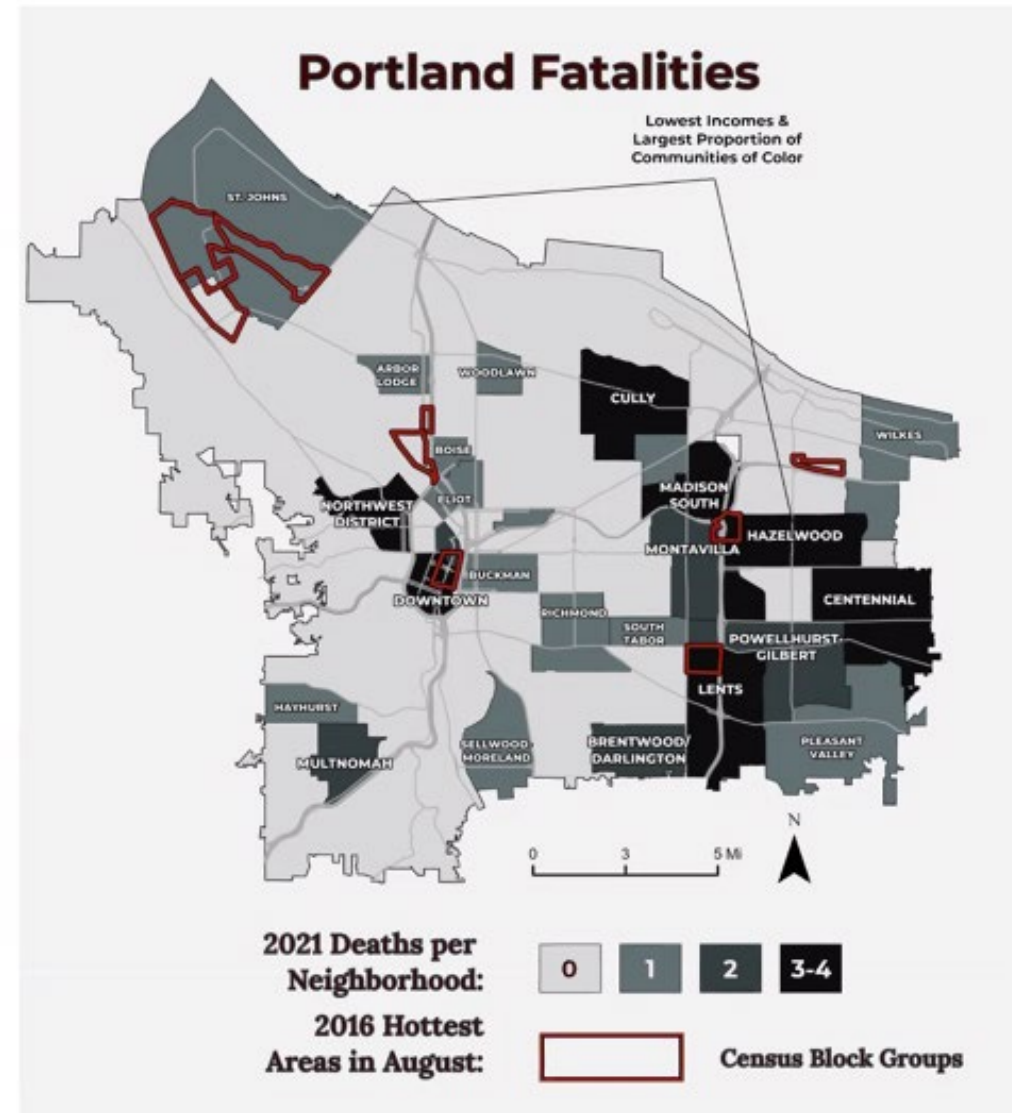
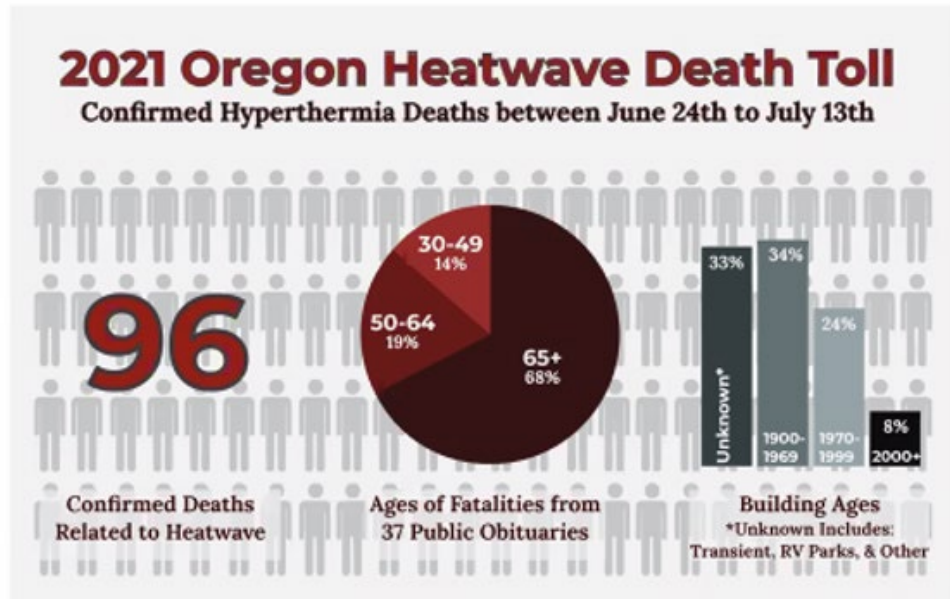


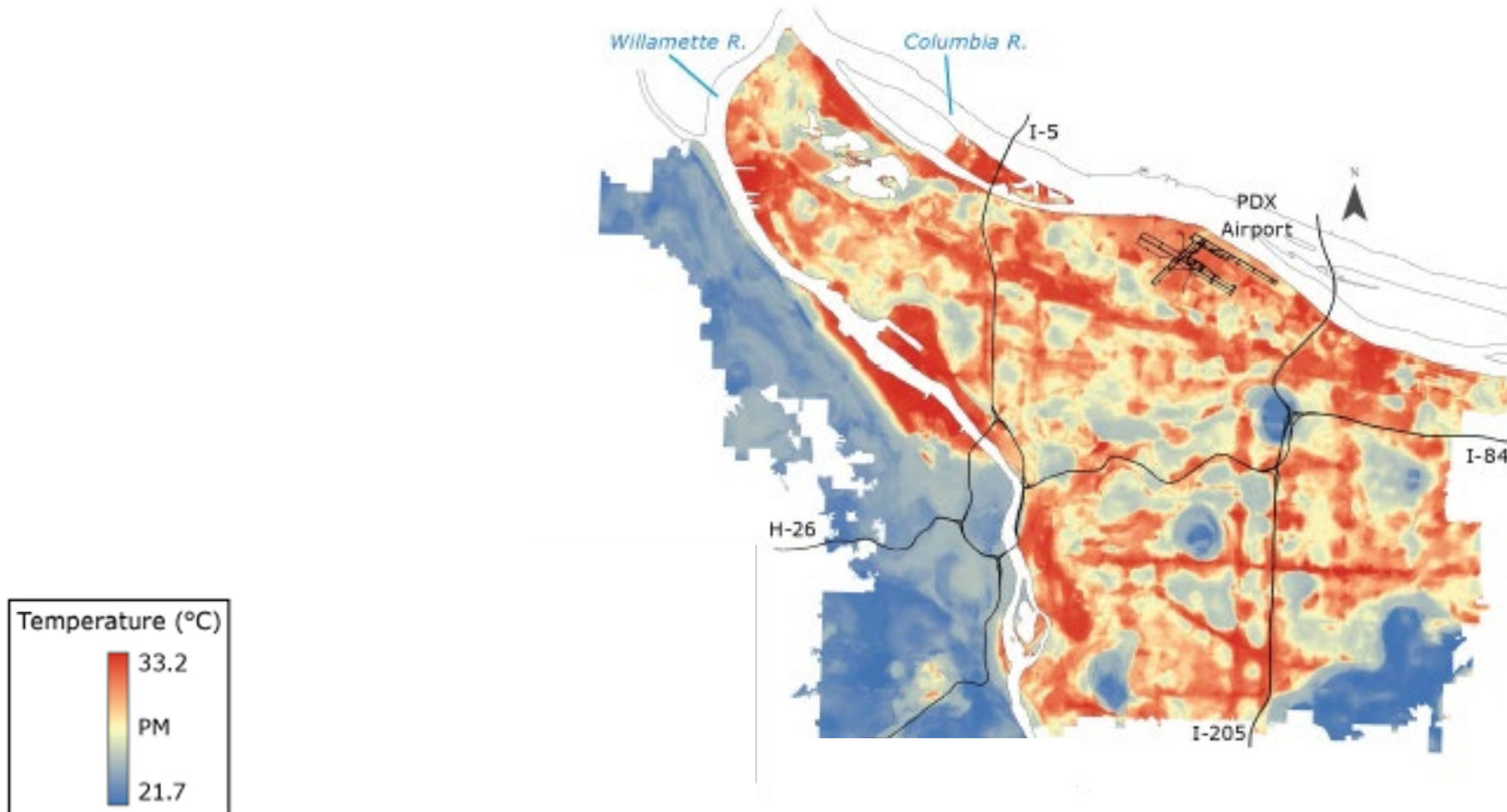
Photo courtesy of Portland City Archives

Historic Heat Wave: Initial Assessment



Urban Heat Island: August 25, 2014

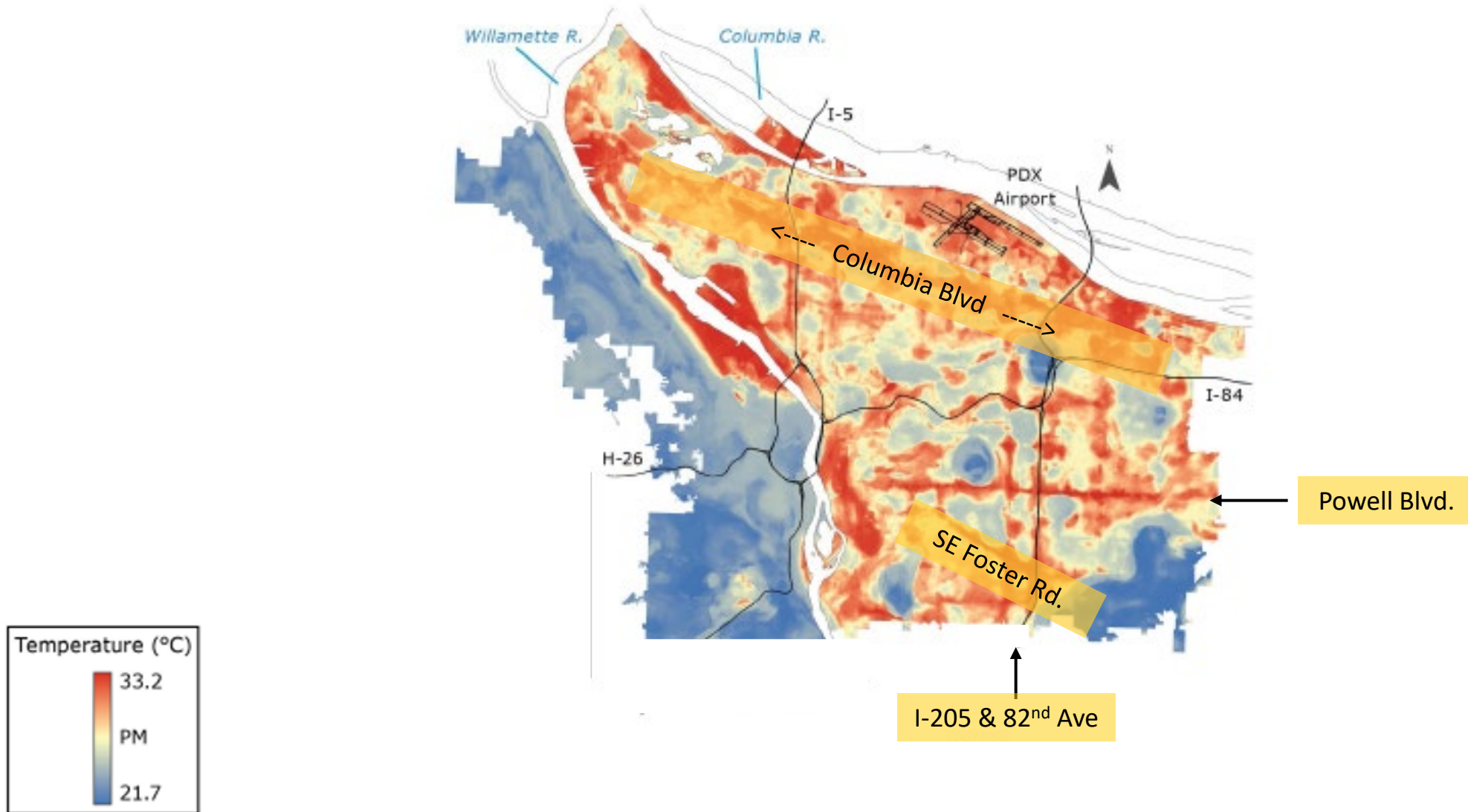
7:00pm temperature recording = 71 - 92° F



Data Source: Sustaining Urban Places Research (SUPR) Lab, Portland State University, 2015

Voelkel J, Shandas V, Haggerty B. Developing High-Resolution Descriptions of Urban Heat Islands: A Public Health Imperative. Prev Chronic Dis 2016;13:160099.

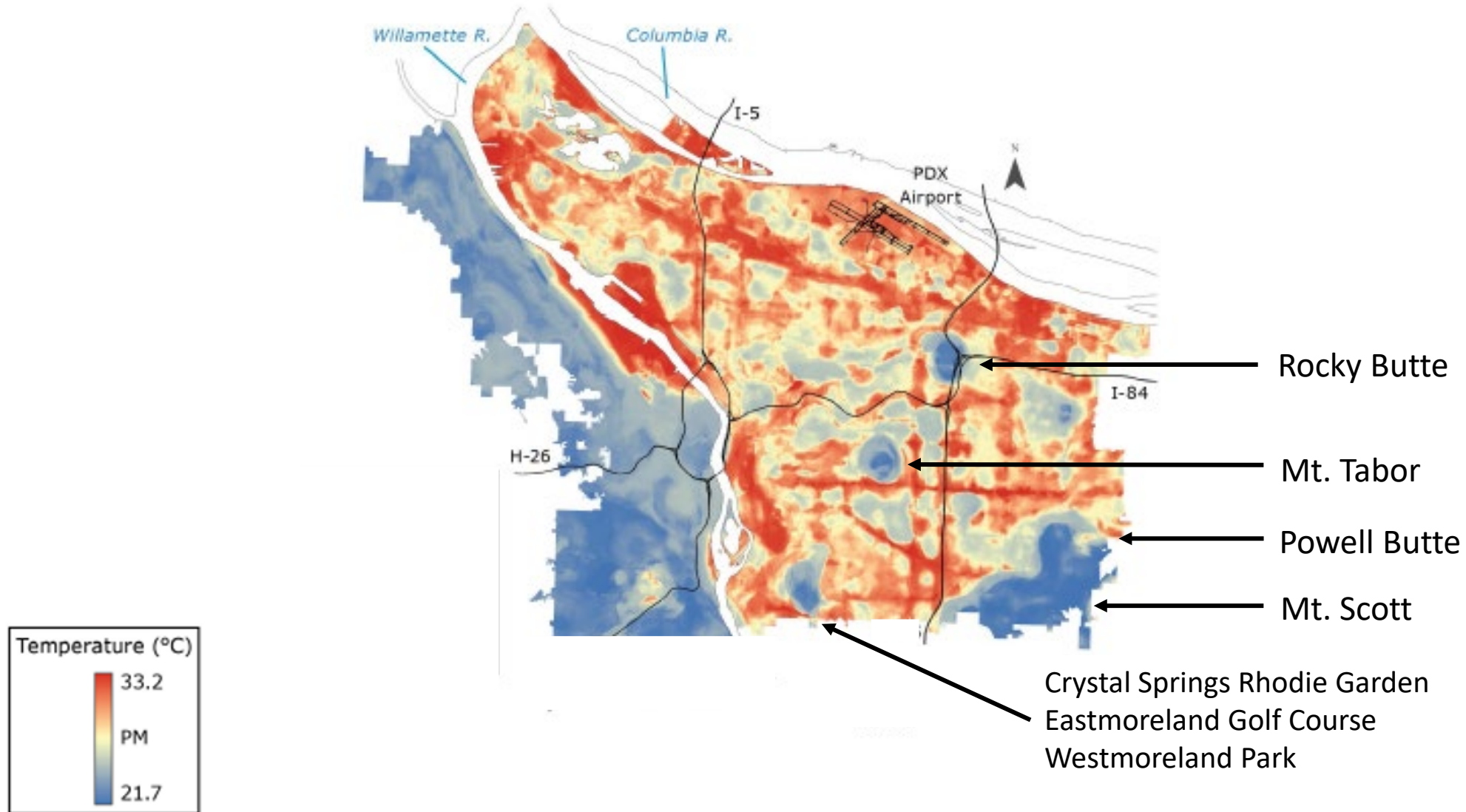
Urban Heat Island: Hot Spots



Data Source: Sustaining Urban Places Research (SUPR) Lab, Portland State University, 2015

Voelkel J, Shandas V, Haggerty B. Developing High-Resolution Descriptions of Urban Heat Islands: A Public Health Imperative. Prev Chronic Dis 2016;13:160099.

Urban Heat Island: Cool Spots



Data Source: Sustaining Urban Places Research (SUPR) Lab, Portland State University, 2015

Voelkel J, Shandas V, Haggerty B. Developing High-Resolution Descriptions of Urban Heat Islands: A Public Health Imperative. Prev Chronic Dis 2016;13:160099.

More Unpredictable Rainfall & Extreme Weather Events





Warmer Temperatures



More Unpredictable Precipitation



Effects on
Natural
Resources



Warmer Temperatures



More Unpredictable Precipitation



Soil



Water



Plants



Air



SOIL

WHAT HAPPENS

- Warms faster
- Dries out sooner
- Stays dry longer
- Erosion
- More landslides

WHAT YOU CAN DO

- Improve soil health:
 - Decrease chemical use
 - Mulch bare soil
 - Fertilize with compost
 - Reduce lawn
- Add native plants/shrubs:
 - Drought-tolerant
 - Varied root depths hold soil and reduce erosion



WATER

(Quantity)

WHAT HAPPENS

Longer, drier summers



Reduced summer flow

Warmer, rainier winters



More flooding

WHAT YOU CAN DO

Reduce water use:

- Install water efficient devices
- Plant drought-tolerant species
- Water wisely, if at all

Soak up the rain:

- Replace lawn with native trees and shrubs
- Install rain gardens
- Create pervious surfaces



WATER

(Quality)

WHAT HAPPENS

Hotter summers &
rainier winters



Erosion & landslides



Dirty water



Warmer temperatures



Less dissolved oxygen

WHAT YOU CAN DO

Prevent erosion:

- Cover bare soil with mulch or vegetation
- Plant mix of trees, shrubs, groundcovers
- Plant deep-rooted species on slopes

Soak it in & clean it up:

- Rain gardens
- Grassy swales
- Pervious pavers
- Green roofs



PLANTS

WHAT HAPPENS

Higher Temperatures =

- Faster evaporation
- Drought
- Water stress
- Pest damage & disease
- Survival struggle

Increased CO₂ =

- Faster growth

WHAT YOU CAN DO

- Choose NATIVE species:
 - Drought tolerant
 - Local to Willamette Valley
- Water wisely
 - Weekly watering number
 - Water deeply, infrequently
 - Drip lines / soaker hoses
 - Tree bags
 - Skip irrigation if possible
 - Cisterns*



AIR

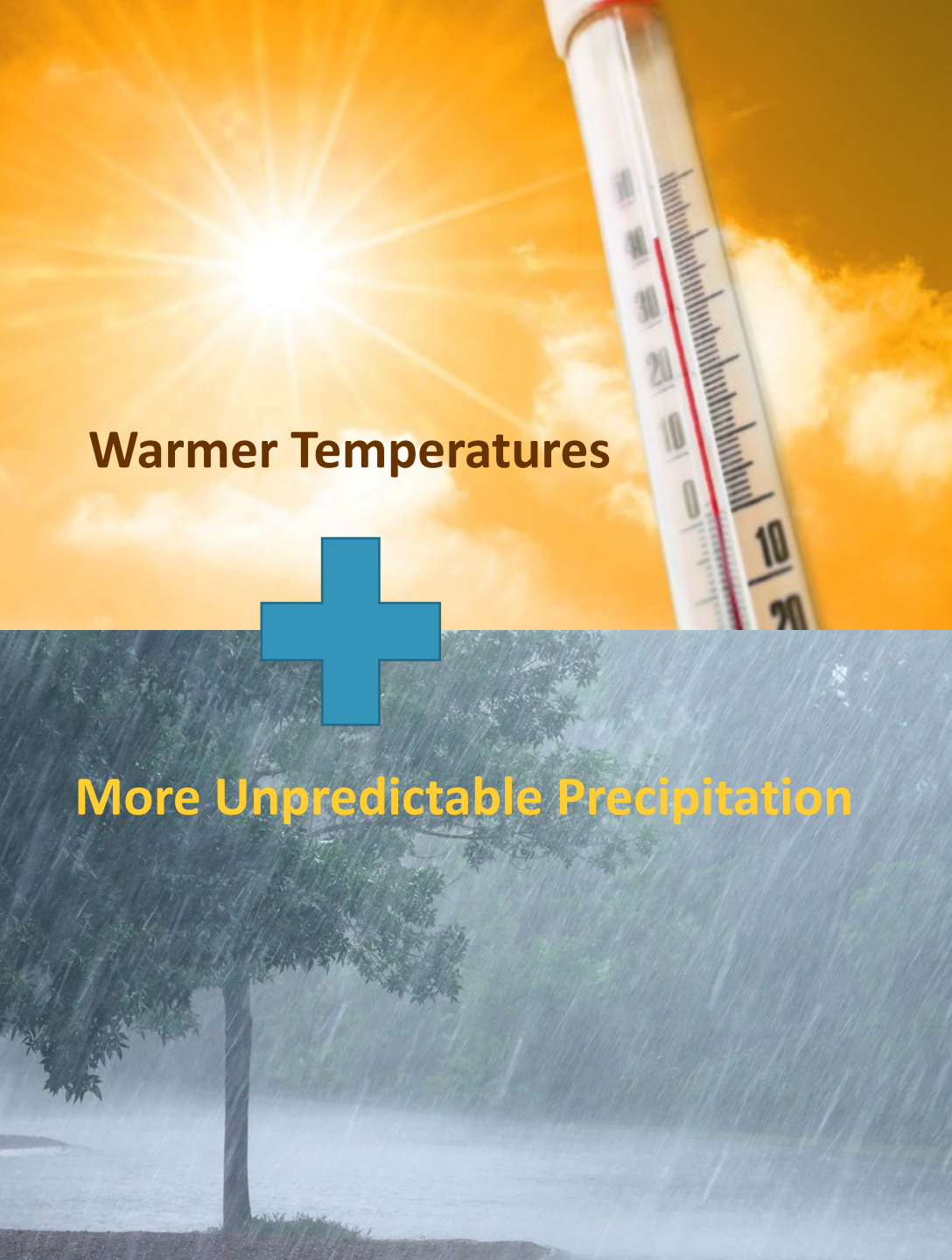
WHAT HAPPENS

Higher Temperatures =

- More air pollution
- Higher pollen counts
- Longer allergy season
- Increased wildfire
- Poor air quality

WHAT YOU CAN DO

- Go electric! (Tools, vehicles)
- Go manual! (Rakes, brooms, mowers, bikes)
- Follow burn bans
- Plant native trees & shrubs
- Use public transit
- Drive less, walk/bike more
- Replace hardscapes with greenscapes



Warmer Temperatures



More Unpredictable Precipitation



Soil



Water



Plants



Air

Reducing Our Impact: Every Action Counts!



At Home



Going Places



Eating



At Home (Inside)

- Turn off lights
- Use compact florescent bulbs
- Tankless or solar water heater
- Thermostat adjustments
- Rechargeable batteries
- Purchase green electricity
- Low-flow faucets, toilets
- Line dry clothing





At Home (Outside)

- Plant trees
- Choose native, drought-tolerant species
- Water-efficient landscaping
- Weekly watering number
- Replace gas powered tools
- Use electric/manual tools
- Leave the leaves
- Remove invasive species



Weekly Watering Number
Oct 13-19, 2022

Enter your zip code to get your number:

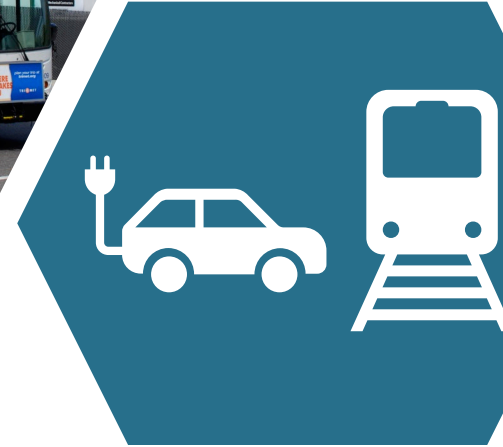
Sign up at regionalH2O.org





Going Places

- Public transit
- Hybrid/electric vehicles
- Bike
- Carpool
- Reduce air travel
- Travel locally
- Camping/glamping
- Telecommute





Food Choices

- Cut down on meat and dairy
- Eat more vegetables
- Eat locally and seasonally
- Reducing packaging
- Reduce food waste
- Buy organic



Come back
for more!



BENEFITS OF
NATIVE PLANTS



LANDSCAPE FOR
WILDLIFE



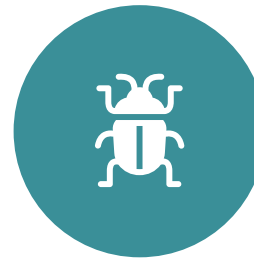
INTRO TO
STORMWATER



INCORPORATE
EDIBLES



INTRO TO
NATURESCAPING



MANAGE WEEDS
& PESTS



OUTDOOR WATER
CONSERVATION