

# A New Heat Tool



## ***NWS HeatRisk***

**Guidance for NWS heat products, Emergency Managers & Public Health Decision Makers**

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# Historically, NWS has used different Heat Criteria across the US

Heat Index vs temps?

Max temp 105 degrees or greater with min temp 75 or greater?

Near Record Max Temps?



Heat-Health System?

Advisories and/or Warnings?

Duration?

Coastal versus mountains?

# Why a new Tool

- We need to have a better way to monitor, communicate and warn of excessive heat.
- **NWS HeatRisk** is our solution!

# Heat Health Research indicates...

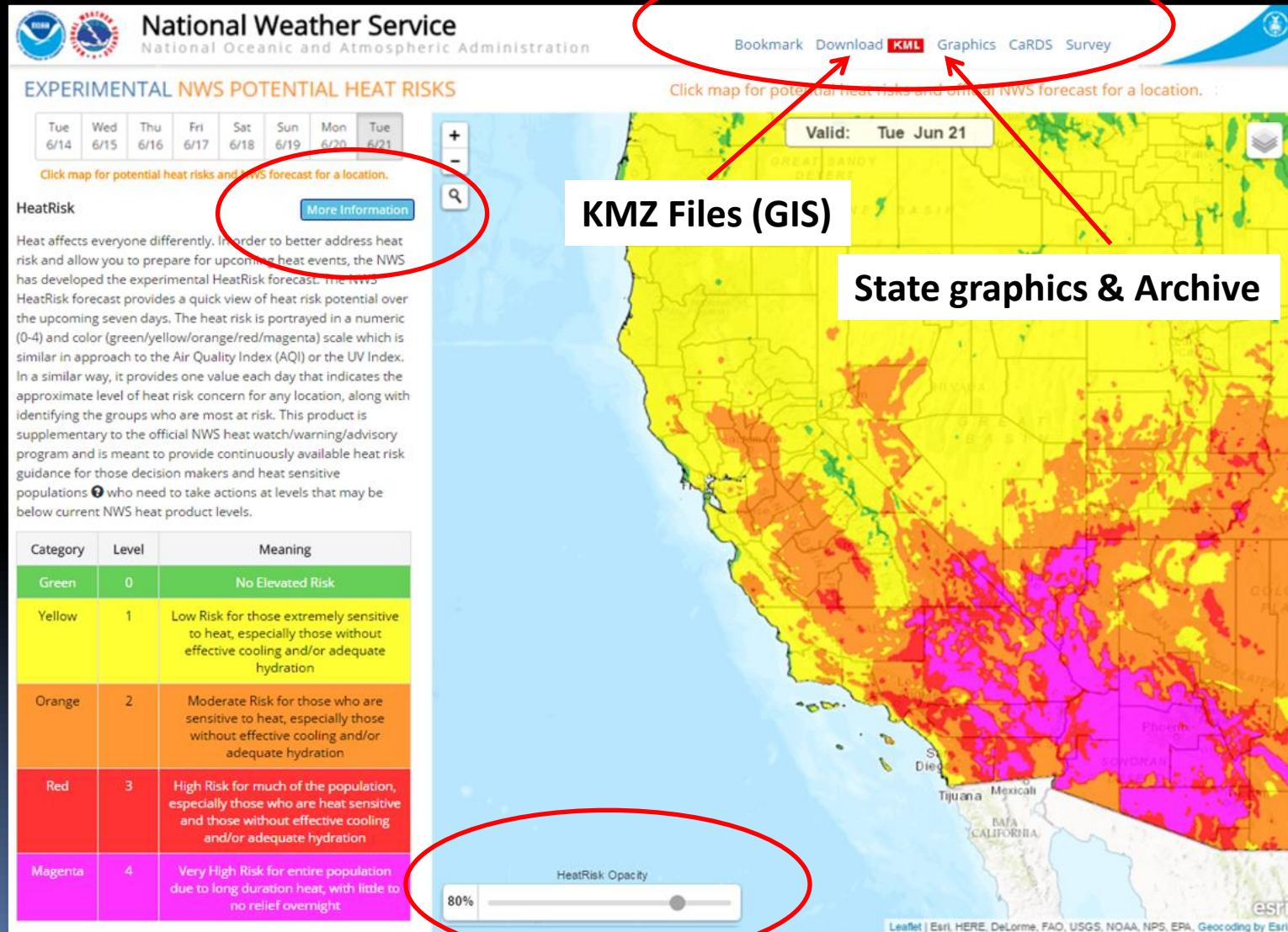
- *Criteria should consider seasonal timing*
- *Complex and diverse climate*
- *Results:*
  - *Using high temperature and duration worked best as a primary driver of heat impacts*
  - *Overnight lows and humidity play some role, but less important*
- *Multi-tiered system that accounts for vulnerabilities of different populations would be beneficial*

# What is HeatRisk

- An approach to highlight heat events that is climatologically based vs a “one size fits all” heat index number
- Thresholds are based on seasonality
- The HeatRisk website will provide a concise way to view where and when heat might have the greatest potential impacts out to 7 days

# NWS HeatRisk Tool

<https://www.wrh.noaa.gov/wrh/heatrisk/>



KMZ Files (GIS)

State graphics & Archive

# **The Science**

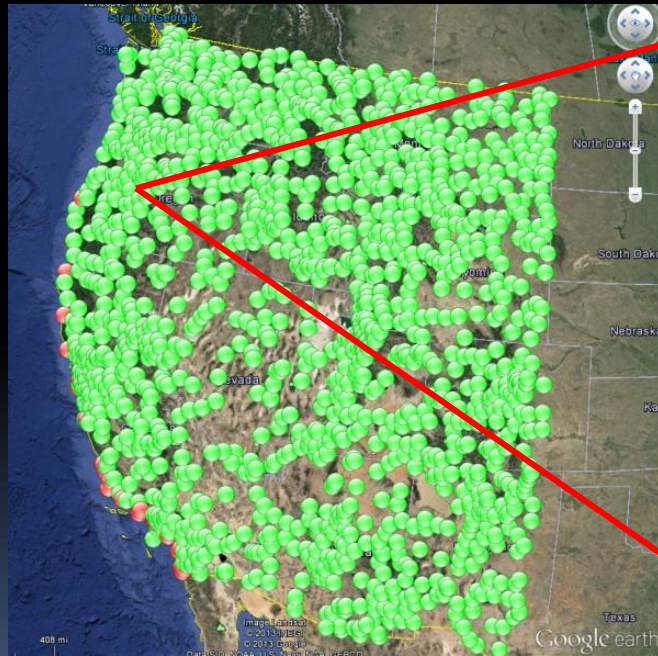
## **What does it consider?**

- **How significantly above normal high and low temperatures are at your location in a 24 hour period**
- **Time of year (e.g. early season vs typical summer heat)**
- **Duration of unusual heat expected**
- **If overnight lows and humidity allow temporary relief or enhancement of the heat wave**

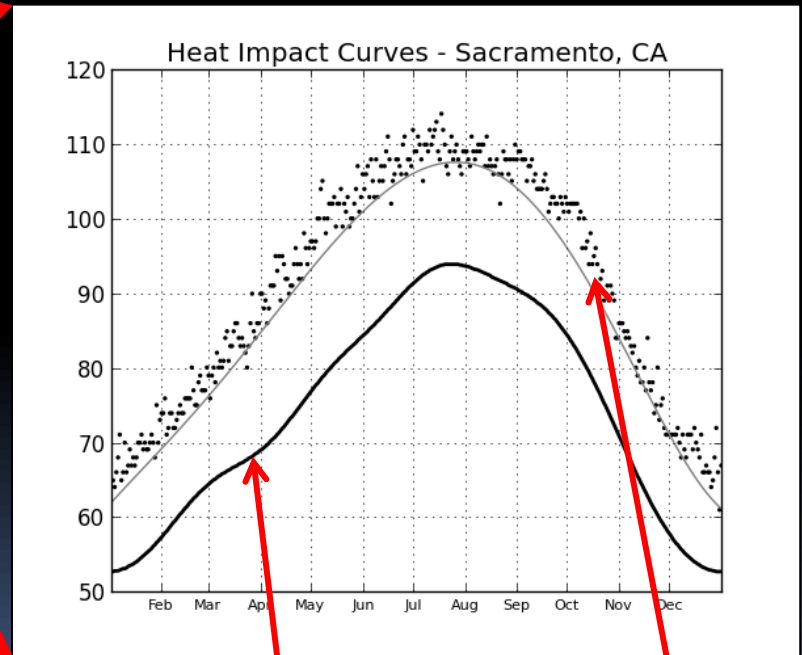


# How Can We Do This?

For each weather observation point: Develop local relationships which use near record high and low temperatures as the foundation.



Over 1400 point observations  
in Western U.S.



Normal highs

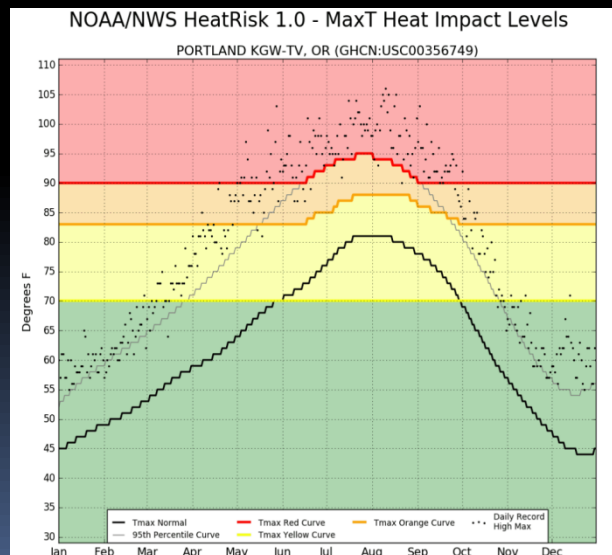
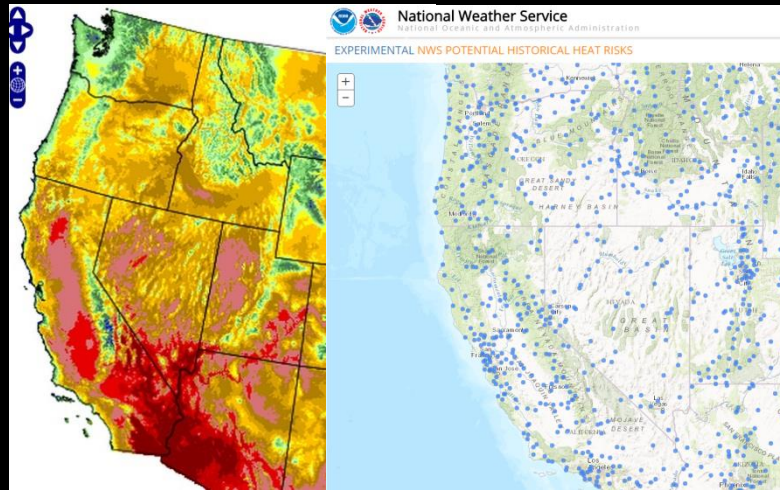
Record highs



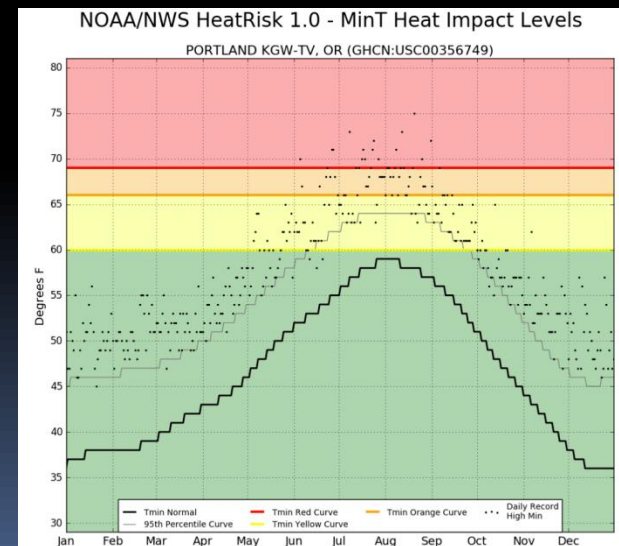
# How Can We Do This?



*Utilize a high resolution climatology database to create unique thresholds at all other points over a 2.5 X 2.5 km grid in the Western U.S.*



Max Temperature Curves



Min Temperature Curves

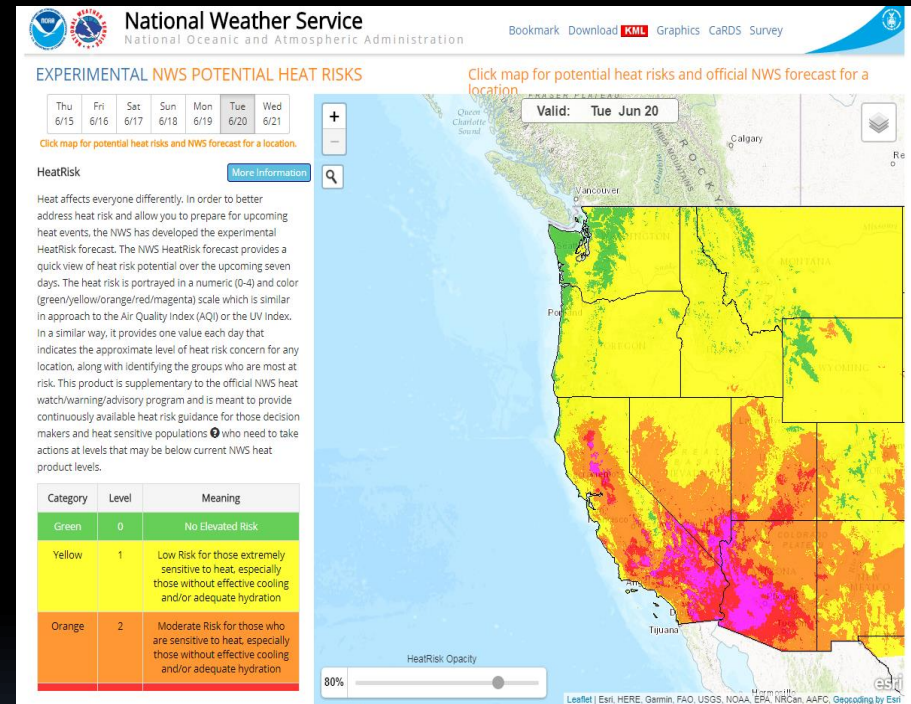
# How will NWS use this?

<http://www.wrh.noaa.gov/wrh/heatrisk/?wfo=pqr>

- Monitor HeatRisk output and use to increase messaging
- Consider HeatRisk when issuing NWS Heat Products
  - Heat Watch
  - Heat Warning
  - Heat Advisory

This daily value indicates the level of heat risk concern for any location, along with identifying the groups who are most at risk.

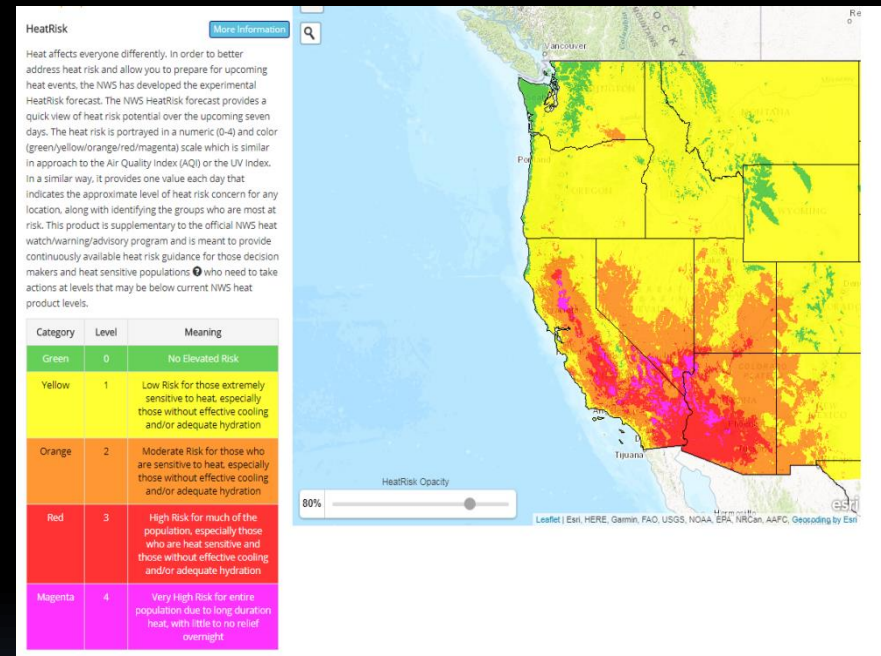
*Essentially, the higher the value, the greater the potential heat risk*



# How can you use it?

<http://www.wrh.noaa.gov/wrh/heatrisk/?wfo=pqr>

- **Is available to 7 days**
  - *Takes advantage of updated data and gridded NWS forecasts*
- **Don't have to wait for NWS products to prepare**
  - *If you see orange or red in days 3-7 in your area, start messaging and making mitigation plans etc.*
- **Easy to understand and use**
  - *Allows users and partners to take actions needed at their time scale using a simple color scale of potential impact levels*
  - *The higher the value, the greater the potential heat risk.*





# Where to Find it? (weather.gov/portland)

The screenshot shows the National Weather Service website for Portland, OR. The page includes a navigation bar with links like HOME, FORECAST, PAST WEATHER, SAFETY, INFORMATION, EDUCATION, NEWS, SEARCH, and ABOUT. A search bar is present with the text "Local forecast by 'City, St' or ZIP code". A green sidebar on the left offers a "Customize Your Weather.gov" section with a "Get Weather" button. The main content area features a "Severe Thunderstorms With Destructive Winds And Very Large Hail In Part Of The Plains Today" alert. Below this, the "NWS Forecast Office Portland, OR" section is visible, with a dropdown menu for "Forecasts" open. The dropdown menu lists various options, with "Experimental HeatRisk" circled in red and a red arrow pointing to it. The background of the page shows a weather map of the Portland area with a "Storm Total Rainfall" overlay.

NATIONAL WEATHER SERVICE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HOME FORECAST PAST WEATHER SAFETY INFORMATION EDUCATION NEWS SEARCH ABOUT

Local forecast by "City, St" or ZIP code  
Enter location ... Go  
[Location Help](#)

**Severe Thunderstorms With Destructive Winds And Very Large Hail In Part Of The Plains Today**  
Severe thunderstorms with potentially destructive winds and very large hail are forecast in parts of Kansas into northern Oklahoma this afternoon into the evening. Additionally, locally severe storms with hail and strong winds will be possible across a broad area from parts of West Texas to the upper Mississippi Valley and points east from the Great Lakes region to the Southeast. [Read More](#)

**NWS Forecast Office Portland, OR**  
[Weather.gov > Portland, OR](#)

Portland, OR  
Weather Forecast Office

Current Hazards Current Conditions Radar **Forecasts** Rivers and Lakes Climate and Past Weather Local Programs

Local Area  
Forecast Discussion  
Aviation Weather  
Fire Weather  
User Defined Area  
Activity Planner  
Severe Weather  
Evapotranspiration  
**Experimental HeatRisk**  
Travel  
Hurricane Center  
Marine  
River Forecasts  
Forecast Graphics

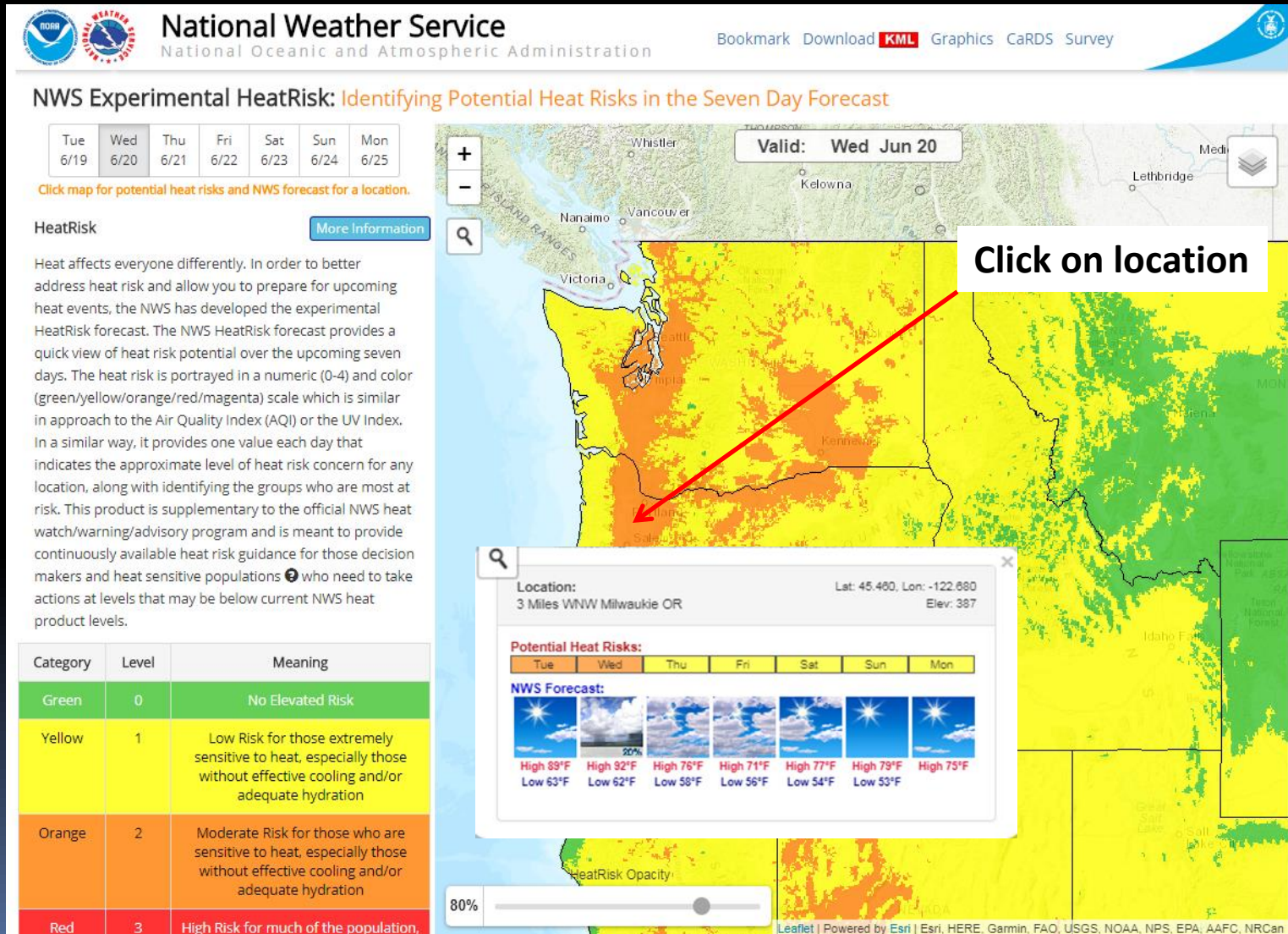
**THURSDAY**  
**WINDS:**  
**Coastal Waters:**  
• Gale Warning  
• Gusts 40 knots  
**Coast:**  
• Gusts 40 – 50 mph  
**Coast Range Higher Elevations:**  
• Gusts 35 - 45 mph  
**Inland Valleys:**  
• Sustained 15 - 25 mph

**WEATHER**  
**Rainy**  
**Storm Total Rainfall**  
Valid: 06/15/2017 05:00 AM - 06/16/2017 11:00 PM PDT

Planning Schedule.x...xlsx

12:44 PM  
6/15/2017

<https://www.wrh.noaa.gov/wrh/heatrisk/?wfo=pqr>





**~~<https://www.wrh.noaa.gov/wrh/heatrisk/>~~**



# Questions?

- **Resources**
- **[weather.gov/portland](http://weather.gov/portland)**
- **<http://www.wrh.noaa.gov/wrh/heatrisk>**

# Extra Slides

NOAA/NWS HeatRisk v1.0 - PORTLAND INTL AP - 2009  
GHCN USW00024229

