

# climate change in Oregon

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[occri.net](http://occri.net)



# key findings from 2017 report

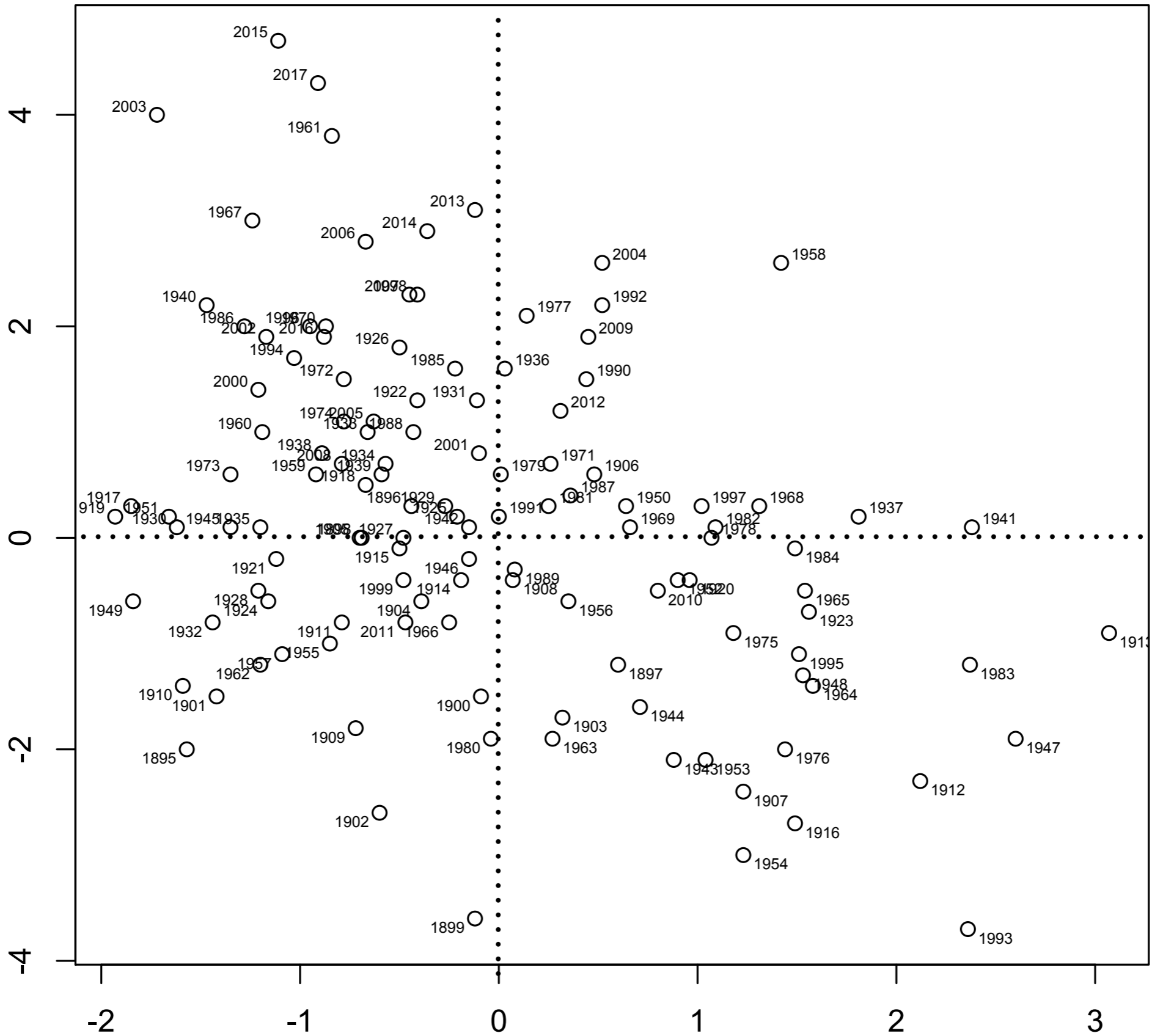
- climate change will continue to impact the health of Oregonians, especially vulnerable populations,
- Oregon will continue to warm; we can now attribute some regional trends to human activity
- declining mountain snowpack is, and will have significant impacts on water resources
- increased coastal flooding and erosion
- ocean acidification
- shifting climates plus disturbances (fire, insects, diseases) will drive forest change
- short-term gains for agriculture, but long-term dependent on adaptations to heat and water
- recent climate events a practice run for the future



# Eagle Creek Fire, September 2017

Kathie Dello, photo

# OR summer precip departures v temp departures, 1895-2017



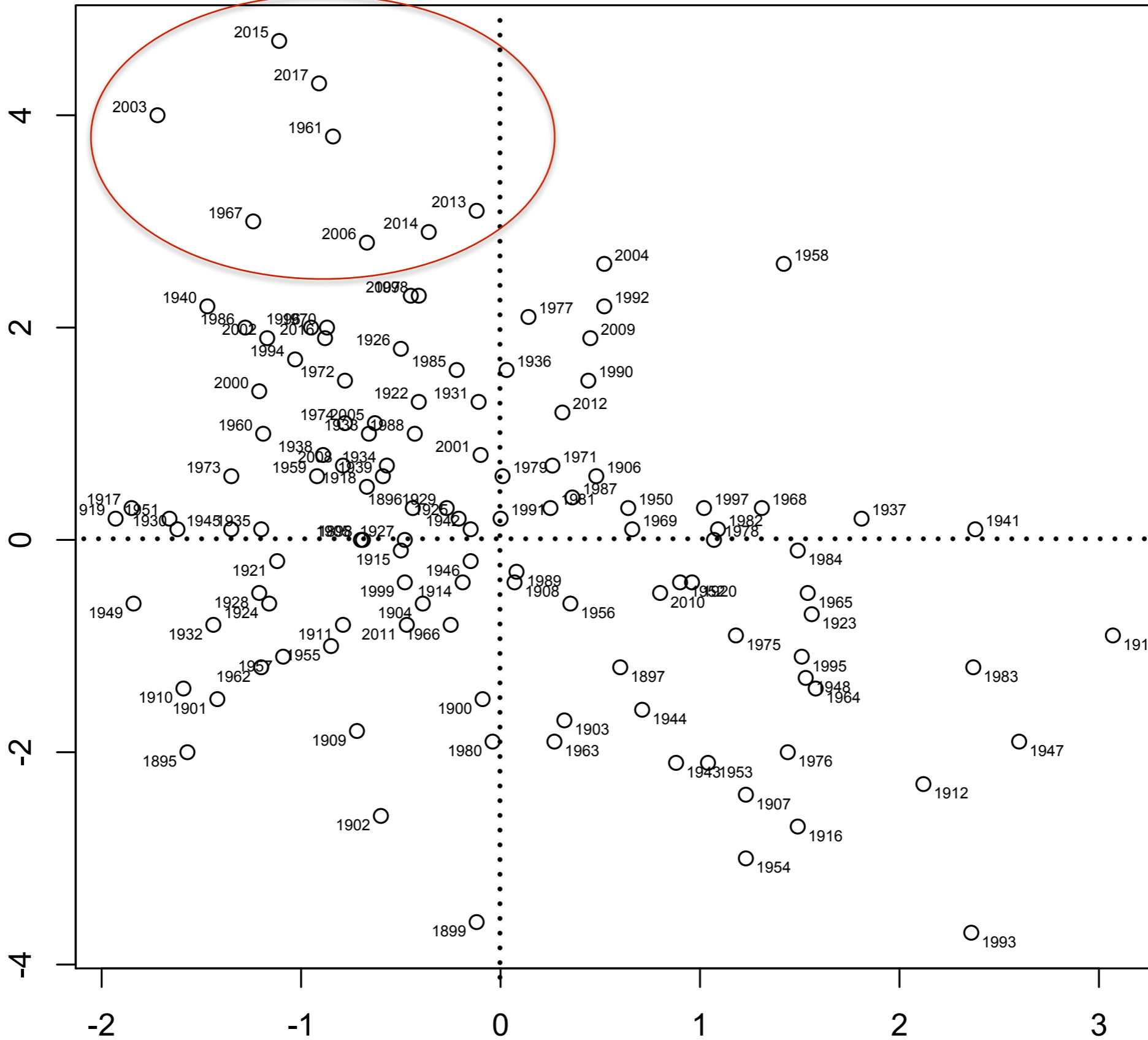
summer precip departure (in.)

Dello, 2017 (unpublished)

# OR summer precip departures v temp departures, 1895-2017



summer temp departure (°F)



summer precip departure (in.)

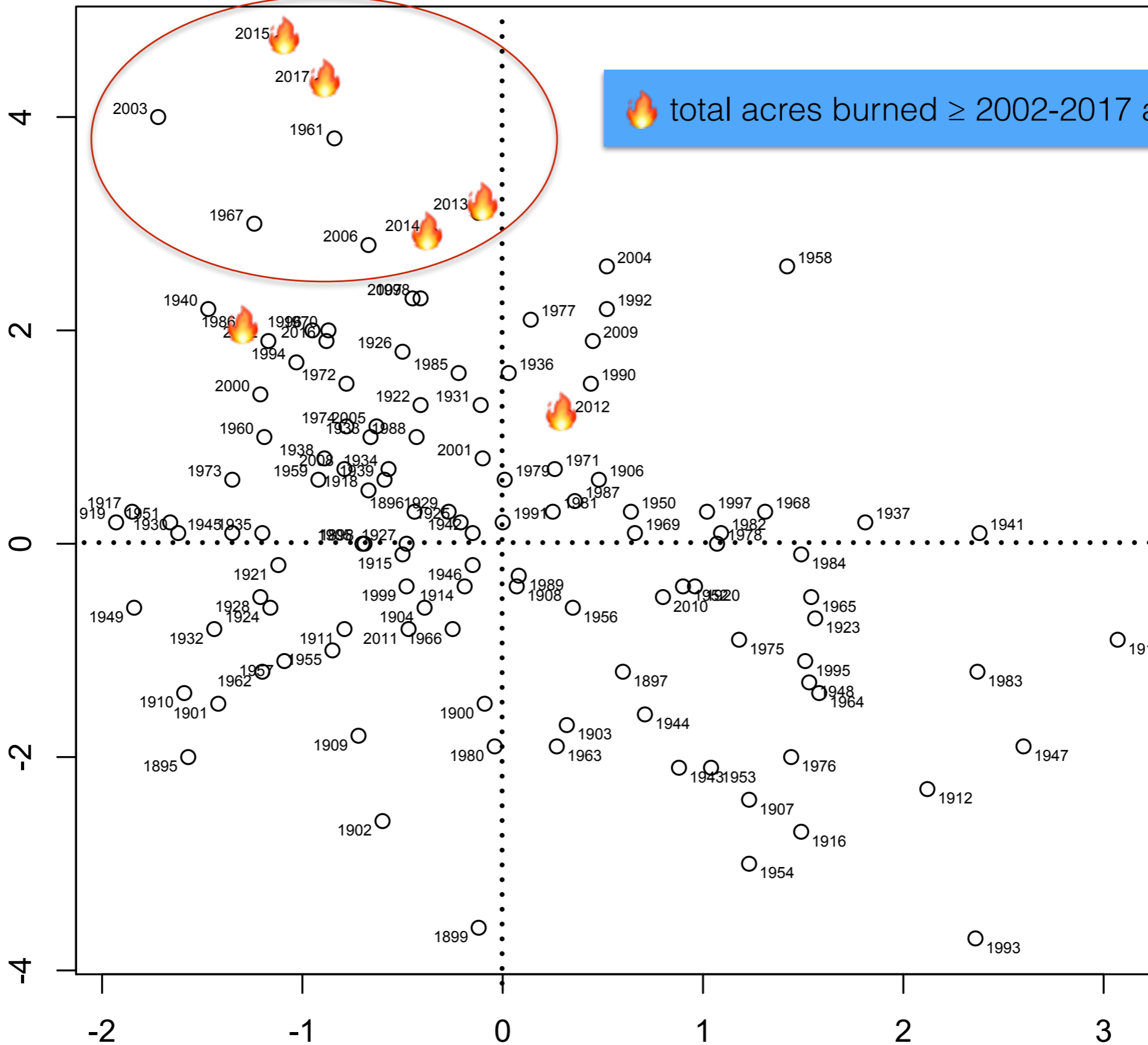


Dello, 2017 (unpublished)

# OR summer precip departures v temp departures, 1895-2017



summer temp departure (°F)



 total acres burned  $\geq$  2002-2017 avg (NIFC data)

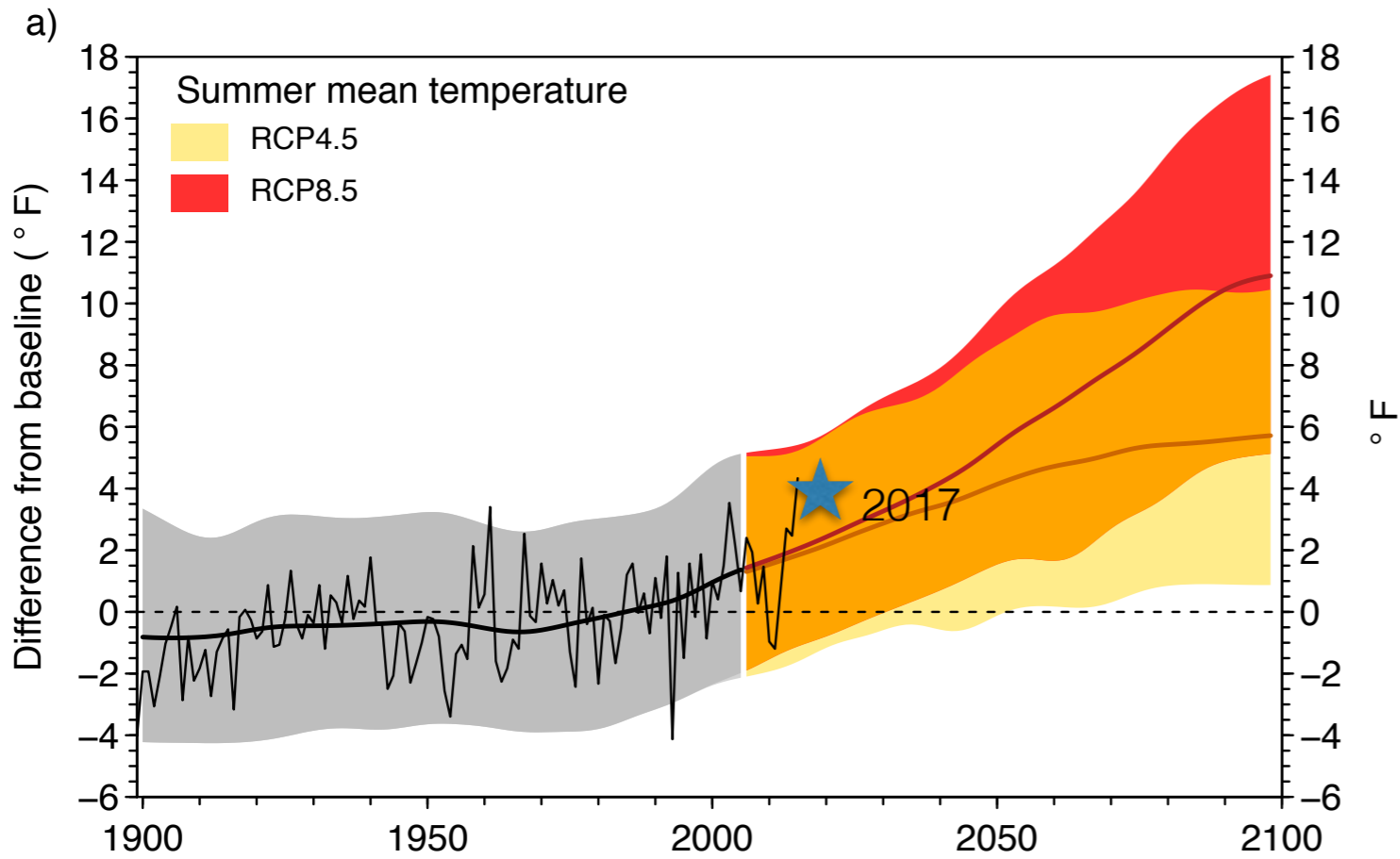


summer precip departure (in.)

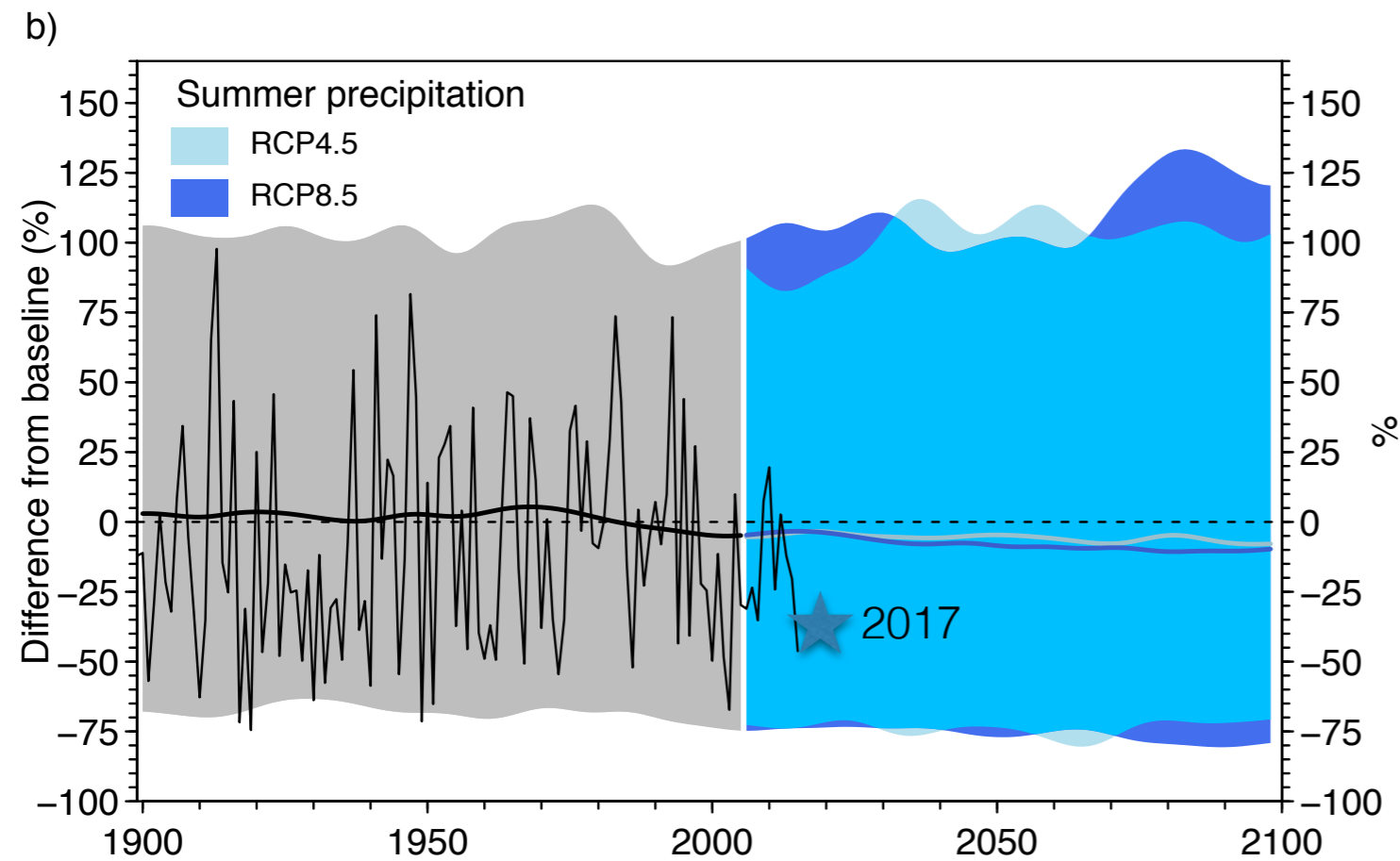


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+2.2°F to +8.9°F by the 2050s

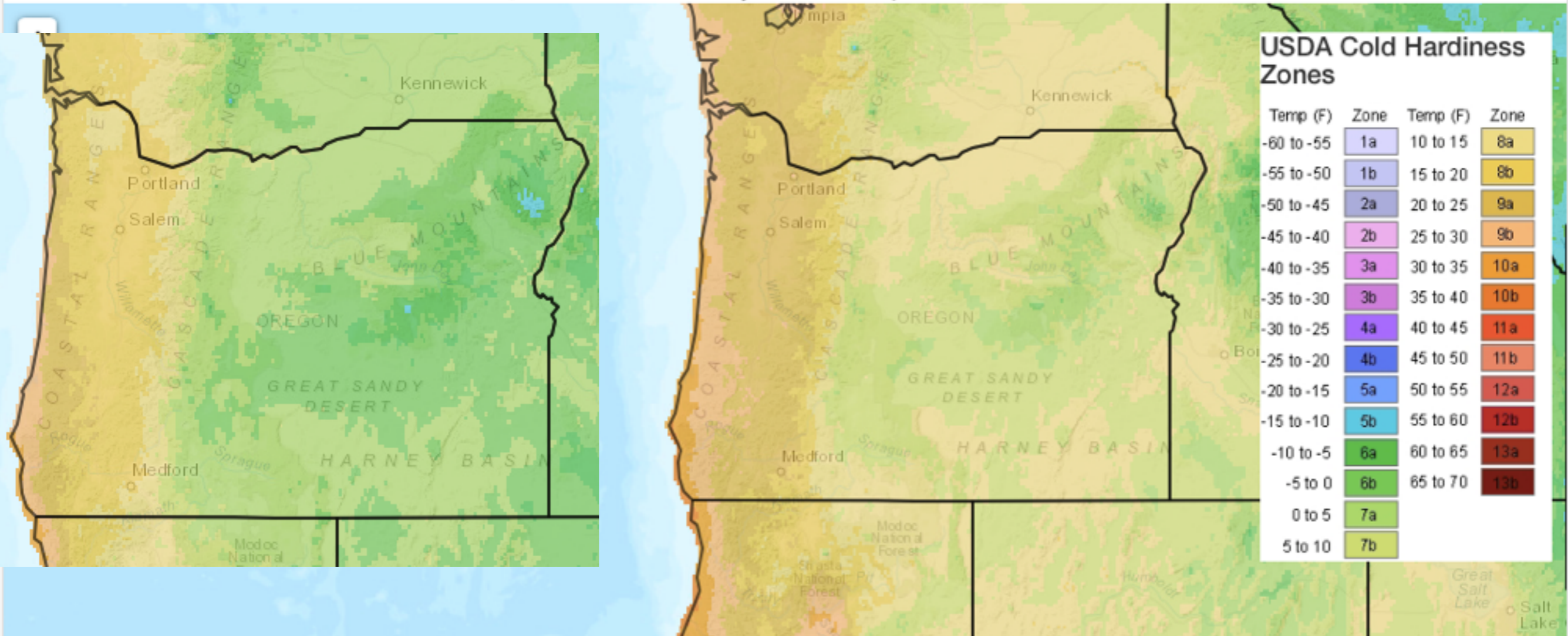


Source: Rupp et al. (2016),  
 adapted for Oregon;  
 Integrated Scenarios project

# Ag impacts: historic (1971-2000) vs future high emissions (2050s)

## Cold Hardiness Zones

Data Source: [MACAv2-METDATA](#), Multi-Model Mean daily minimum temperatures



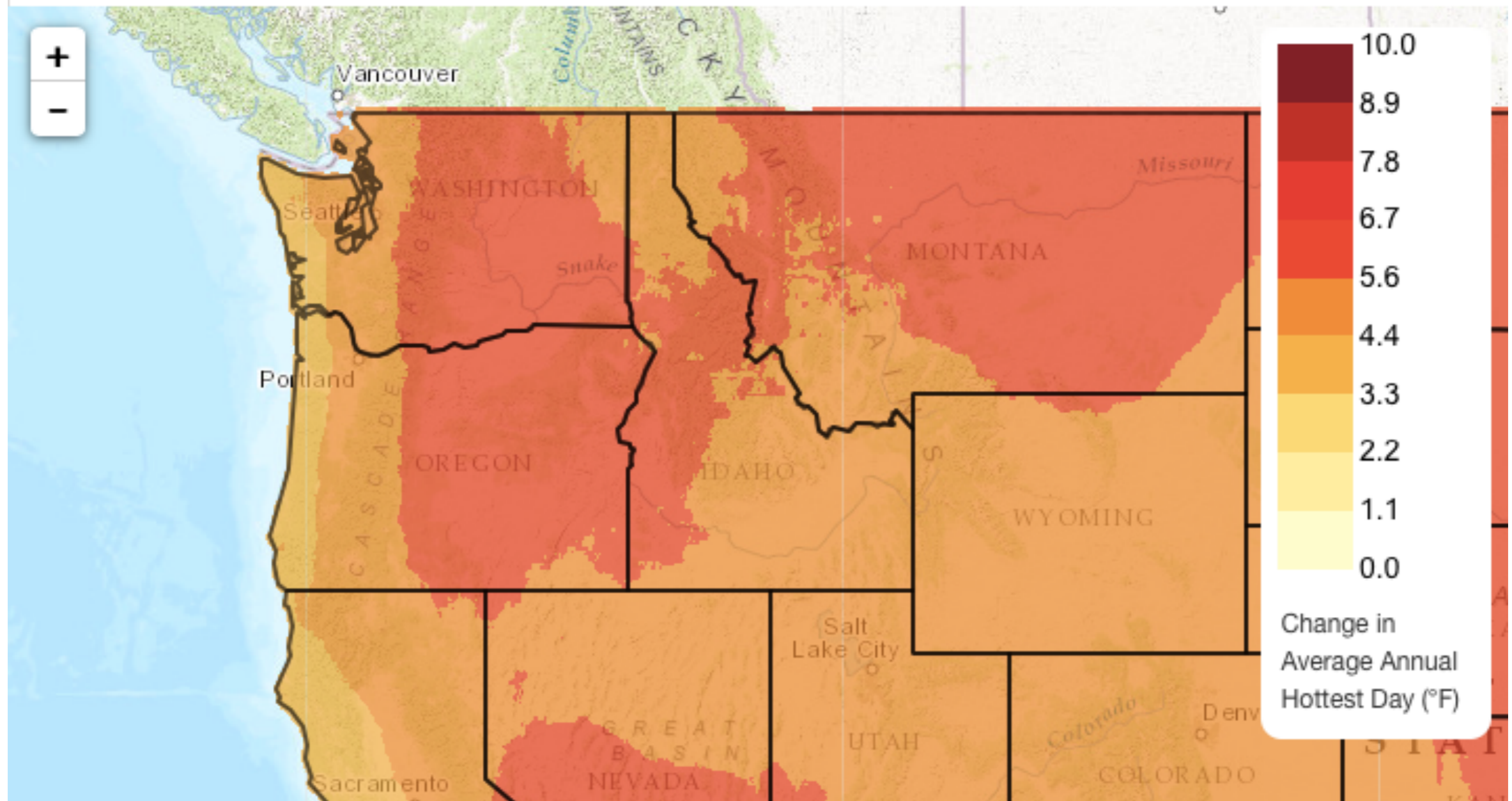


ag, transportation, social impacts

## Projected Change in Hottest Day (Annual Average)

RCP4.5 2040-2069 vs. 1971-2000

Data Source: Data Source: [MACAv2-METDATA 4-km dataset \(U Idaho\)](#), Multi-Model Mean



Source: NW Climate Toolbox



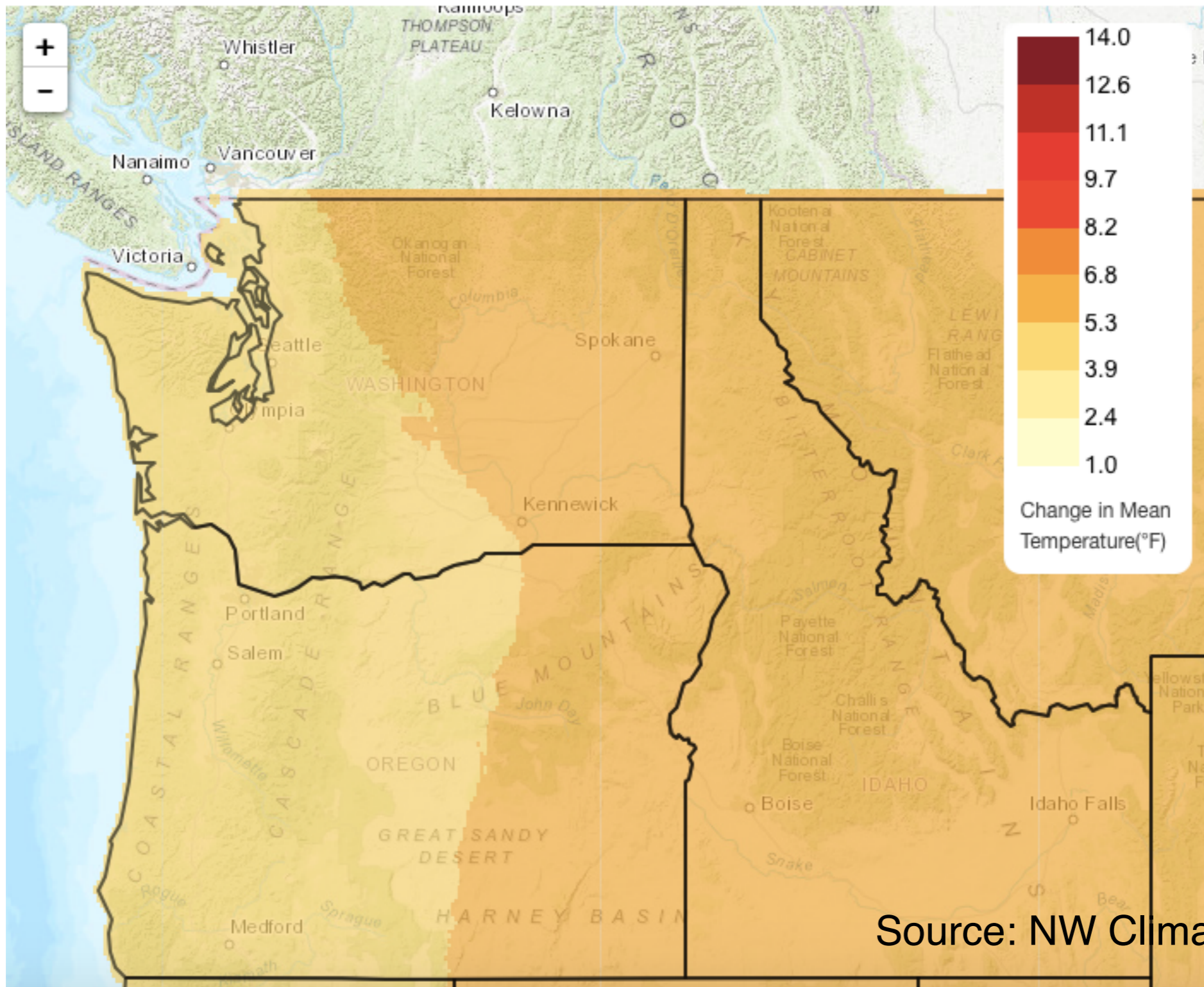
from Hoodoo web cam  
February 23, 2015



# Projected Change in Winter (Dec-Jan-Feb) Mean Temperature (°F)

RCP8.5 2040-2069 vs. 1971-2000

Multi-Model Mean

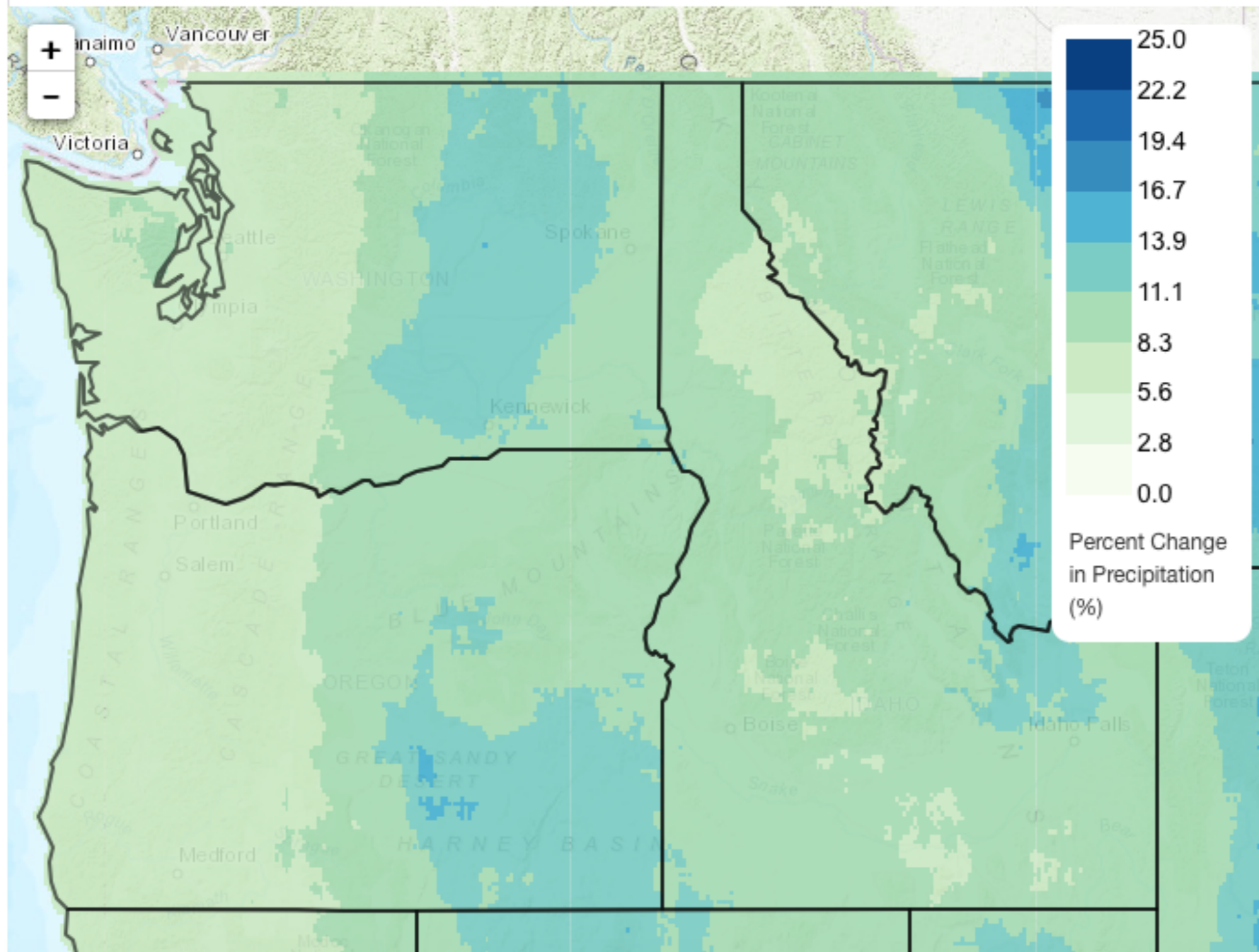


Source: NW Climate Toolbox

# Projected Change in Winter (Dec-Jan-Feb) Precipitation (% of Normal)

RCP8.5 2040-2069 vs. 1971-2000

Multi-Model Mean

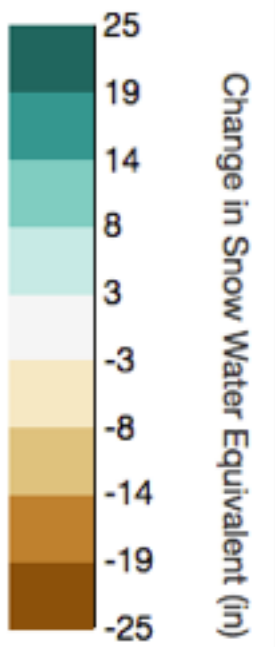
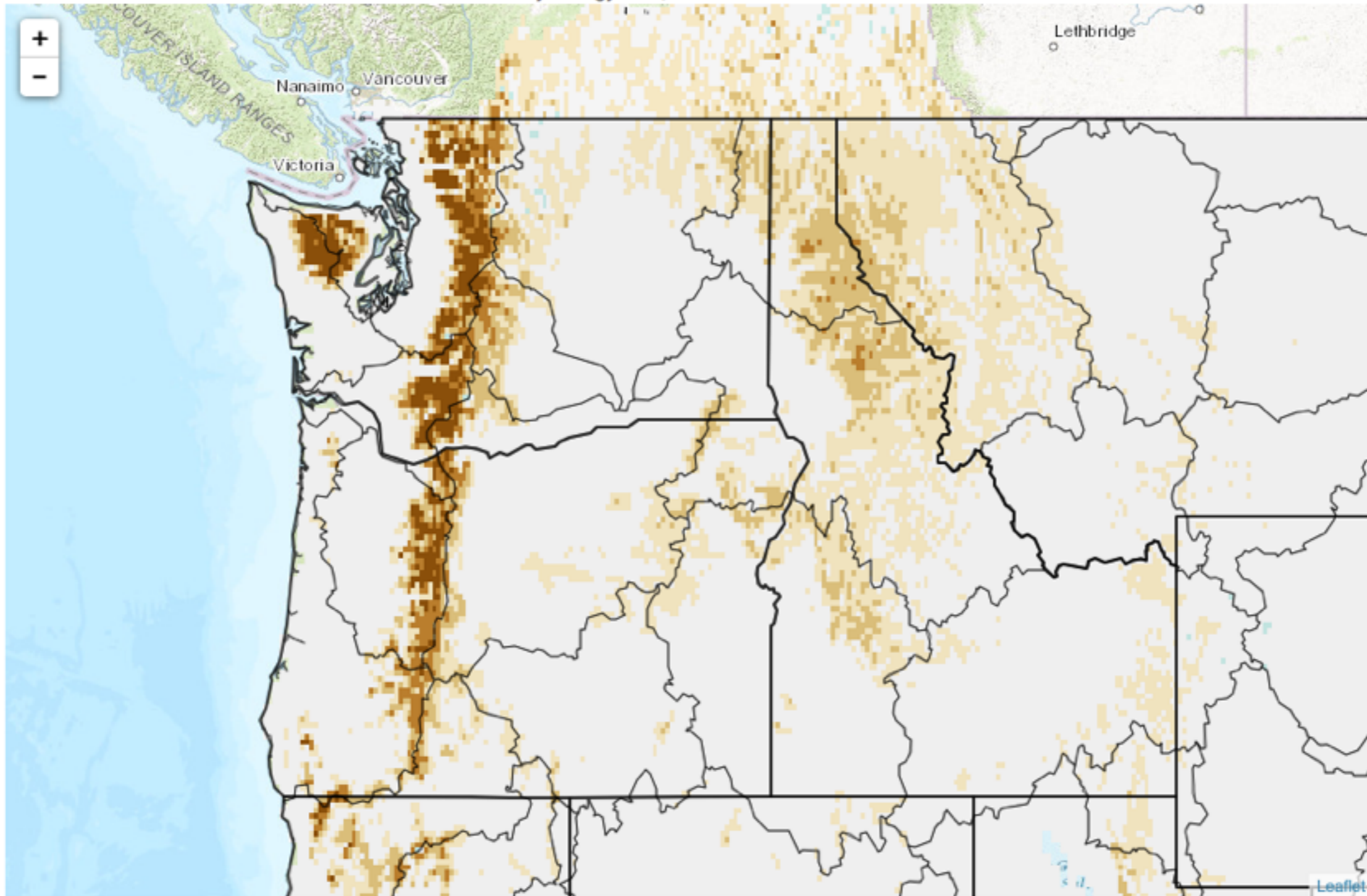




# Projected Changes in April 1st Snow Water Equivalent

RCP8.5 2040-2069 vs. 1971-2000

Data Source: Hydrology: VIC, Multi-Model Mean



## Layers

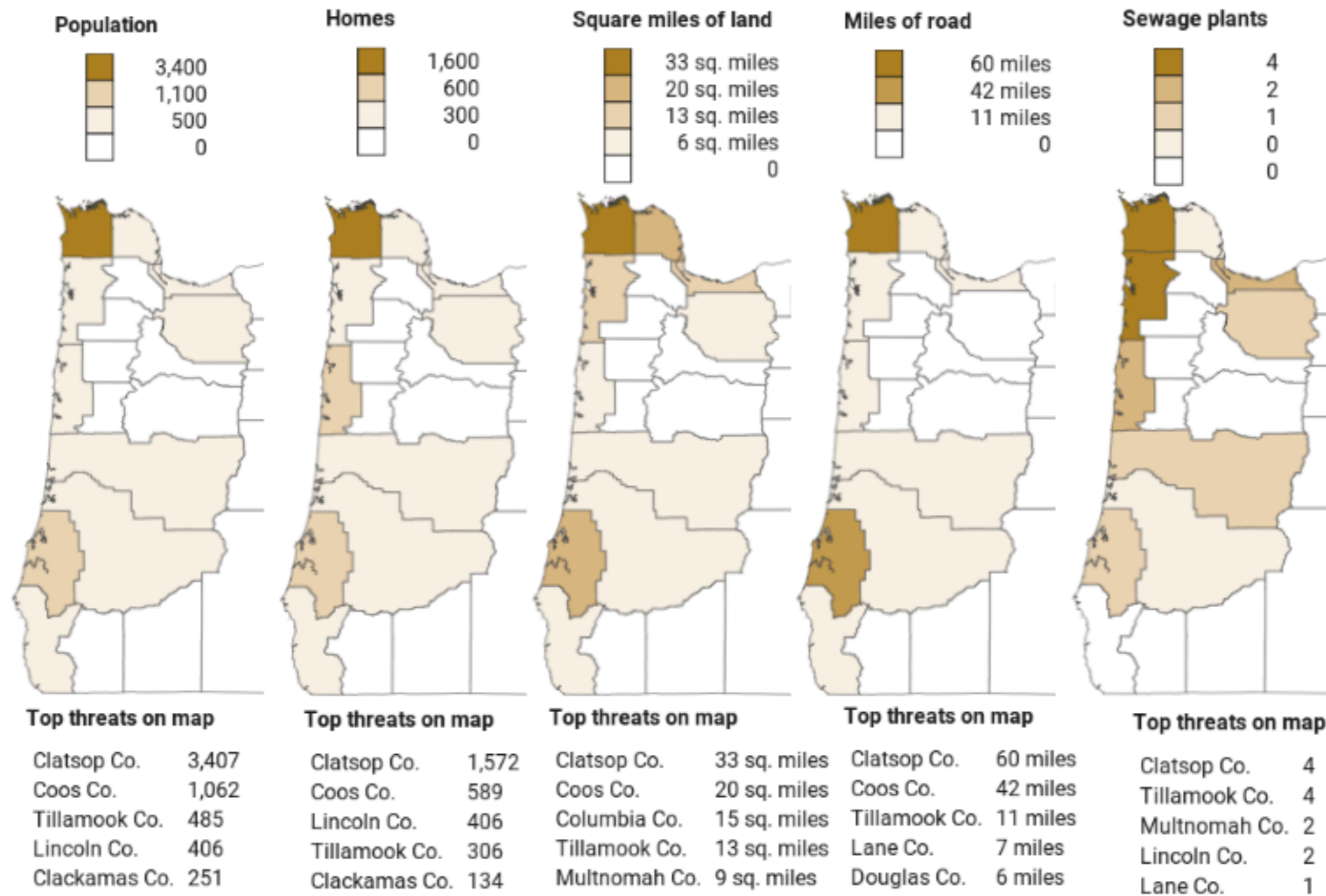
- US States
- US Counties
- US HUC 8



Marker:  
Latitude:

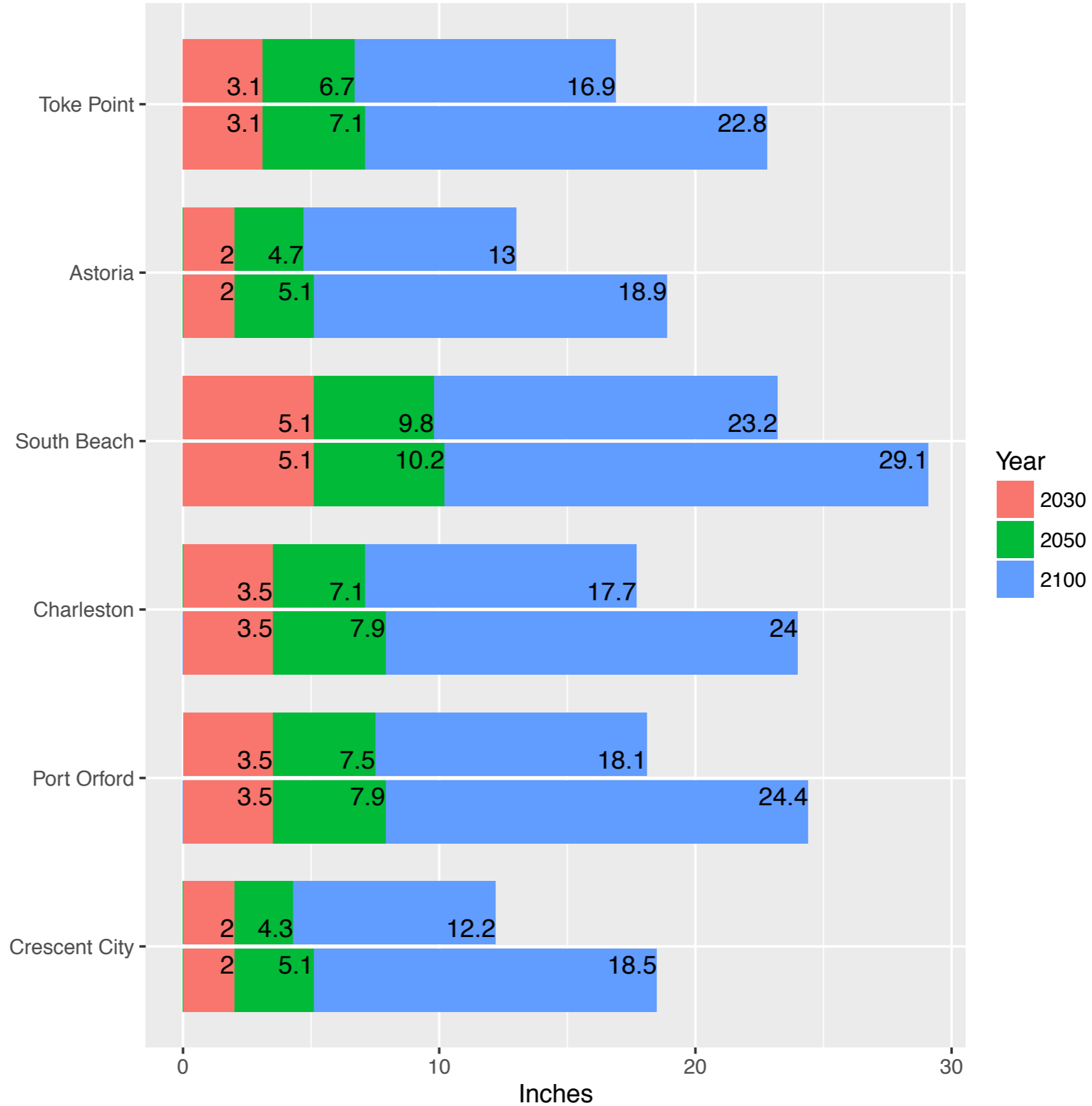
Source: NW Climate Toolbox

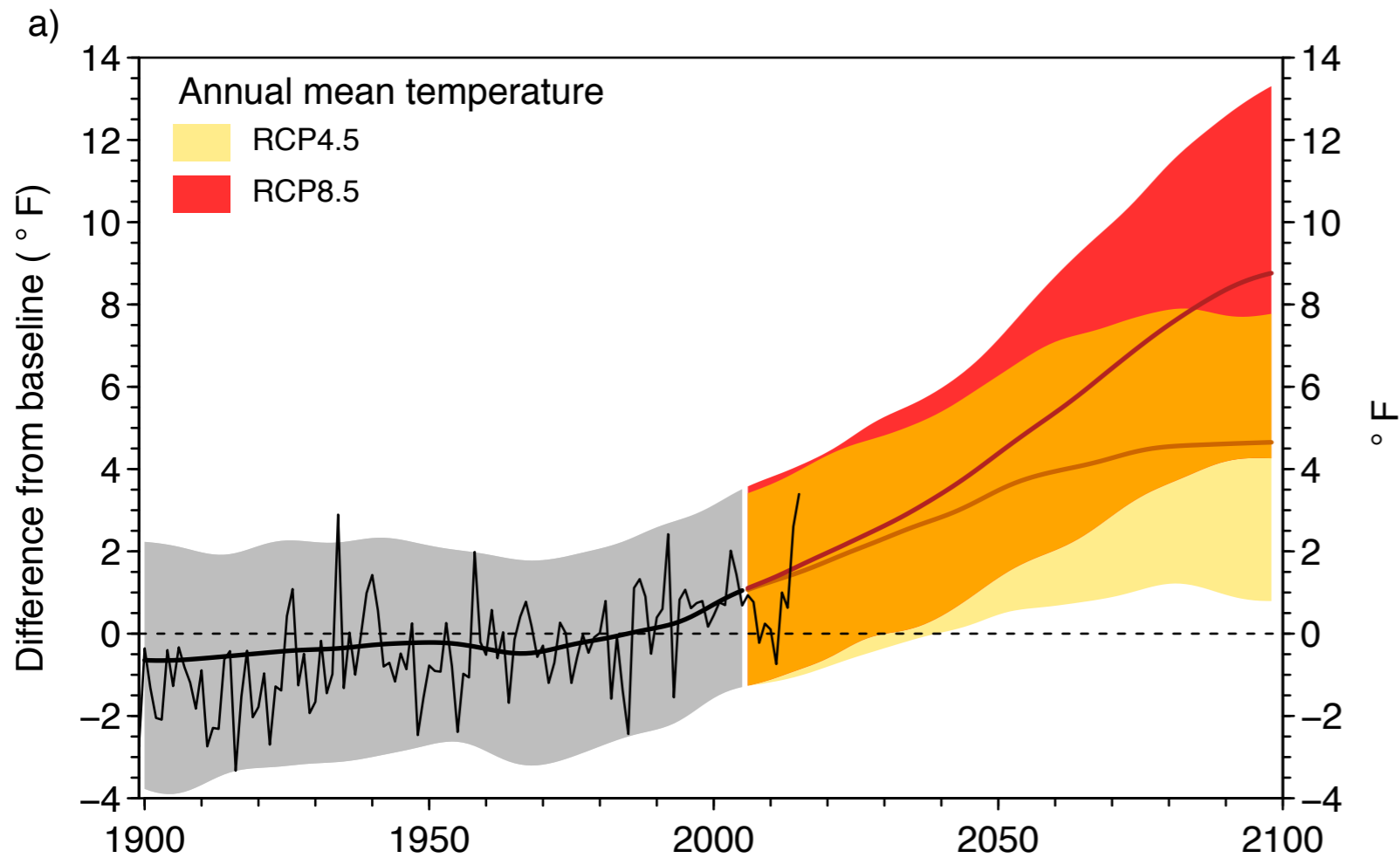




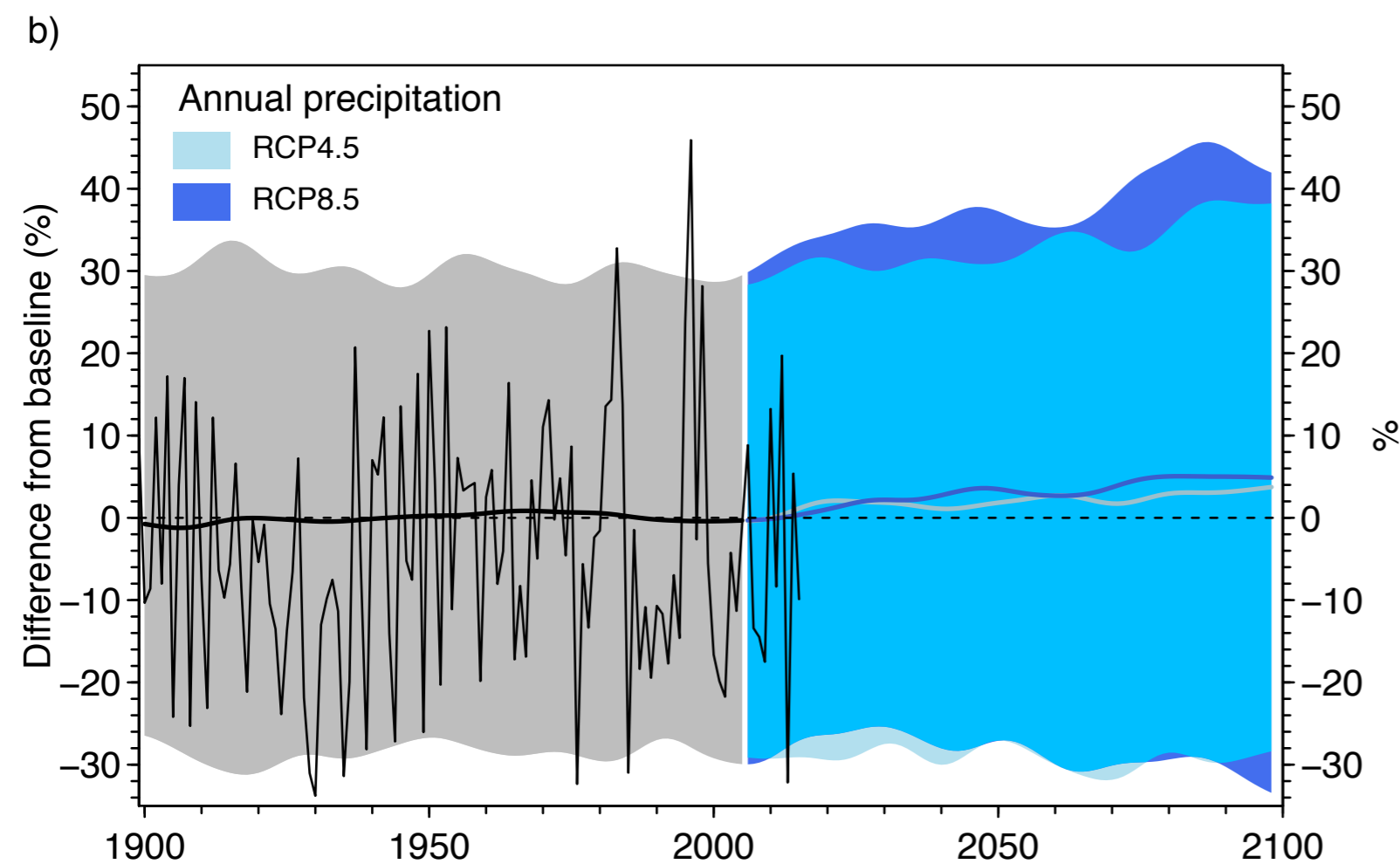
Source: Climate Central

# Local Sea Level Rise Projections





+1.8° to +6.9°F by the 2050s



-6.0% to +11.4% by the 2050s

Source: Rupp et al. (2016),  
 adapted for Oregon;  
 Integrated Scenarios project

# summary

- climate change will continue to effect Oregonians
- Oregon will continue to warm in all seasons, especially summer
  - fire, snow, agriculture - temperature sensitive, cascading social, economic, and ecological effects
  - reducing global emissions will reduce warming
- big fire seasons in past 15 years tend to be hot, dry summers
- coastal impacts with global sea level rise and coastal flooding, crucial infrastructure at risk
- frame questions to “did climate change make this event/season more likely”

# key findings

- climate change will continue to impact the health of Oregonians, especially vulnerable populations,
- Oregon will continue to warm; we can now attribute some regional trends to human activity
- declining mountain snowpack is, and will have significant impacts on water resources
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- shifting climates plus disturbances (fire, insects, diseases) will drive forest change
- short-term gains for agriculture, but long-term dependent on adaptations to heat and water
- recent climate events a practice run for the future