Step-by-Step Guide for Understanding Local Climate Projections

www.climatetoolbox.org

Below is guidance for how to use the Climate Toolbox to understand and communicate localized projections in the state of Oregon. These are simple, step-by-step queries that anyone can do. For more detailed and accurate analysis and interpretation, public health officials are advised to contact the state climatologists at the Oregon Climate Change Research Institute.

Projected Change in Number of Extreme Heat Days

1. Select under Tools: "Historical and Future Climate Mapper"

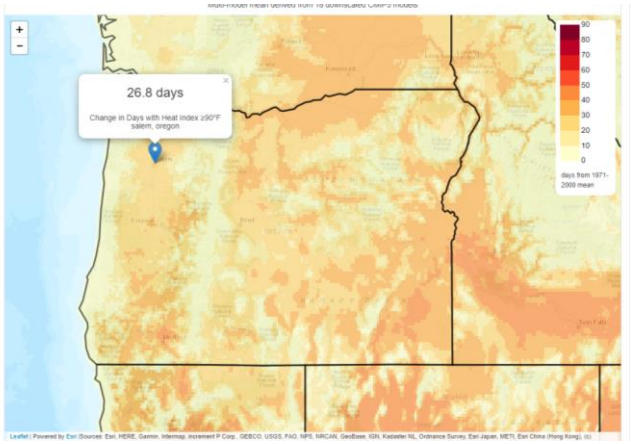
2. Enter the following selections:
Time Scale: "Future: Projections (through 2100)
Impact Area: "Climate"
Variable: Climate Indices: "Days with Heat Index > 90*F"
Future Scenario: Future Changes: "Higher Emissions (RCP 8.5) 2040-2069 vs. historical simulation 1971-2000, mean change"
Model: "Multi-model mean derived from 18 downscaled CMIP5 models"

3. Choose a location:
This will be an exact point location (could enter a town), not an entire county.
For the example below, we entered: "Salem, OR"

4. Communicate your data:

By mid-century (2055) , the city of Salem can expect around 27 more days above 90 degrees every year (compared to what was expected in the year 2000).

Cropped screen shot of map >



Projected Changes in High Fire Danger Days

1. Select under Tools: "Historical and Future Climate Mapper"

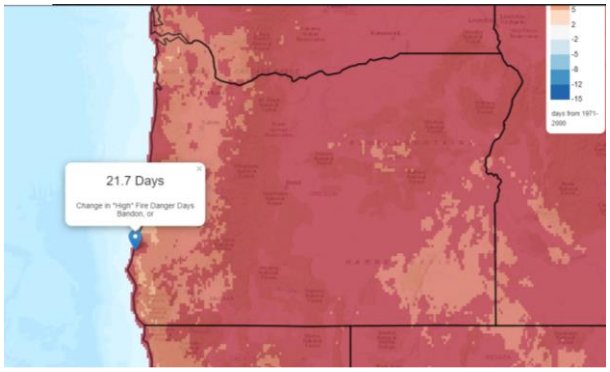
2. Enter the following selections:
Time Scale: Future Projections (through 2100)
Impact Area: "Fire Danger"
Variable: Fire Danger Days: "High Fire Danger Days (100 Hour Fuel Moisture Below 20 Percentile)"
Calendar Time Period: "Annual"
Future Scenario: Future Changes: "Higher Emissions (RCP 8.5) 2040-2069 vs. Historical simulation 1971-2000, mean change"
Model: "Multi-model mean derived from 18 downscaled CMIP5 models"

3. Choose a location:
This will be an exact point location (could enter a town), not an entire county
For the example below, we entered: "Bandon, OR"

4. Communicate your data:

By mid-century (2055), the town of Bandon can expect around 22 more "High Fire Danger Days" (compared to what was expected in the year 2000).

Cropped screen shot of map >



Projected Changes in Flood Risk

1. Select under Tools: "Historical and Future Climate Mapper"

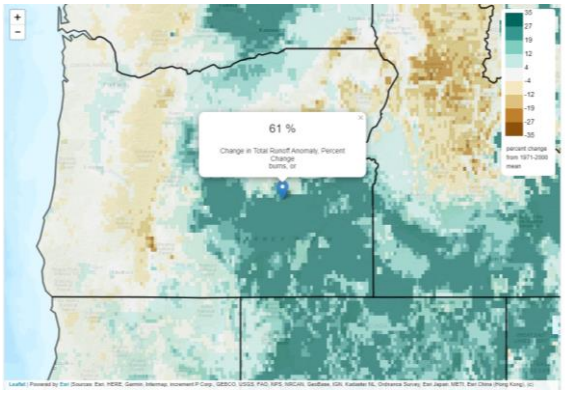
2. Enter the following selections:
Time Scale: Future Projections (through 2100)
Impact Area: "Hydrology"
Variable: Hydrology Anomalies: "Total Runoff Anomaly, Percent Change (%)"
Time Period: "Annual"
Future Scenario: "Higher Emissions 2040-2069"
Model: "Multi-model mean derived from 18 downscaled CMIP5 models"

3. Choose a location:
This will be an exact point location (could enter a town), not an entire county
For the example below, we entered: "Burns, OR"

4. Communicate your data:

By mid-century (2055), the town of Burns can expect around 61% more "runoff anomalies" which can lead to increased flood risks (compared to what was expected in the year 2000).

Cropped screen shot of map >



IN GENERAL:

(1) Look at "percent changes" (which uses 1971-2000 time period as a baseline).
(2) Look at higher emissions mid-century scenarios for projections.
(3) Explore other variables that may show more extreme changes in your local area