TOWN OF TRUCKEE, CA

CLIMATE CHANGE TRENDS & PROJECTIONS

California is already experiencing substantial impacts brought on by climate change. These impacts affect all sectors of our communities, including human health, natural resources, infrastructure, emergency response, economics, and others. People and resources already at risk are expected to experience even more climate-related impacts than others.

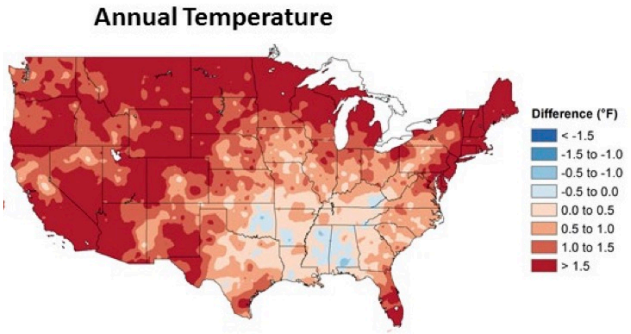

Figure 1. While the U.S. has warmed about 1.2° F on average, the Western U.S. has warmed 1.5° F on average, since 1901-1960.[1]

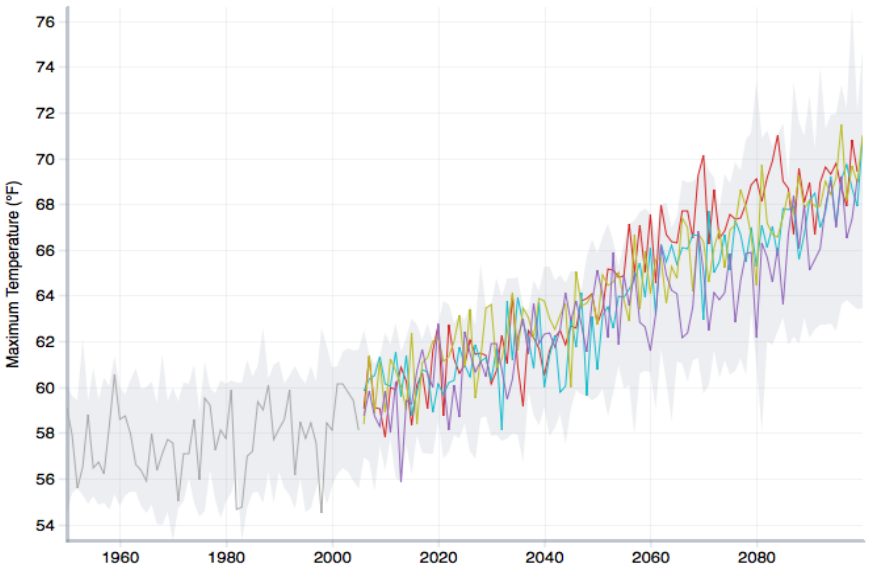

Figure 2. Historical (avg. = 57.5° F) and future projected (+10° F on average) maximum temperature in Truckee, based on a higher emissions scenario (RCP 8.5). Data from 32 LOCA model ensemble available through Cal-Adapt.[2]

Historical Trends*

- Temp. ↑ 2.0° F
- Number of days below freezing ↓ 8 days per year
- Number of days above 90° F ↑ 10 days per year

*1987-2016 compared to 1937-66

Likely Future Trends

- Max. temp. ↑ 6-7° F by 2050s and 8-11° F by 2080s
- Number of days above 90° F ↑ 14-31 days/yr. by 2050s and 32-57 days/yr. by 2080s
- Precip. ↓↑ -11% to +37% by 2050s and ↑ +1% to 61% by 2080s (uncertain)
- April Snow Water Equivalence (SWE) ↓ 68-71% by 2050s and ↓ 84-96% by 2080s
- Number of days with precipitation above 2 inches ↑ 4 days (to 17) by 2080s
- Drought stress ↑ 32-51% by 2050s and 44-78% by 2080s
- Percent of heating degree days ↓ 37% by 2080s
- Area burned by wildfire ↑ doubled by 2080s
- Elevation at which rain turns to snow ↑ 1,500-3,000 feet higher by 2080s

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WHAT DOES CLIMATE CHANGE MEAN FOR TRUCKEE?

The climate is what defines any given locality and, for many of us, makes it home. There are many vulnerabilities associated with climate change, some more predictable than others. Some predicted impacts of continued climate change in Truckee include:

- ✓ Snowpack could be eradicated below 6,000 feet by the end of the century[3]
- ✓ Increase in drought stress, resulting in stress to flora and fauna as well as declining river and lake levels[3]
- ✓ Larger storms leading to greater flood risk, stressing existing water infrastructure, as well as homes and energy infrastructure[3]
- ✓ Negative impacts to tourism, forestry, and agriculture-based economies due to declines in snowpack, forests, and water resources[3]
- ✓ Increased threats to life and property from wildfire in the Wildland-Urban Interface and other areas[3]
- ✓ Negative health impacts from heat, especially exacerbating existing health problems among elderly and people with chronic illnesses[3]
- ✓ Reduced air quality as heat increases ground level ozone, which is associated with heart and respiratory disease[4]
- ✓ Longer and more severe heat waves affecting the elderly, outdoor workers, infants, and other vulnerable populations[4]
- ✓ Exacerbated stress and increased incidence of mental illness, especially associated with prolonged periods of heat, flooding, and other extreme events[4]
- ✓ Loss of fish and wildlife habitat, forest diversity, and forest cover, especially mature and higher elevation forests[3]
- ✓ Natural systems, such as meadows and wetlands, expected to experience loss of important natural function including water filtration, flood abatement, fish and wildlife habitat, and recreational opportunities

REFERENCES

[1] USGCRP, 2017: *Climate Science Special Report: Fourth National Climate Assessment, Volume I* [Wuebbles, D.J., et al. (eds.)]. U.S. Global Change Research Program, Washington, DC, USA.

[2] California Energy Commission. 2019. Cal-Adapt. Accessed 5/8/2019 at https://cal-adapt.org.

[3] Dettinger, M., H. Alpert, J. Battles, J. Kusel, H. Safford, D. Fougeres, C. Knight, L. Miller, and S. Sawyer. 2018. Sierra Nevada Summary Report. California's Fourth Climate Change Assessment. Publication number: SUM-CCCA4-2018-004.

[4] May, C., C. Luce, J. Casola, M. Chang, J. Cuhaciyan, M. Dalton, S. Lowe, G. Morishima, P. Mote, A. Petersen, G. Roesch-McNally, and E. York, 2018: Northwest. In *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment*, Volume II [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA.