

CASE STUDY

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## PROJECTIONS AND SCENARIOS

# HOW HOT WILL IT BE? TRANSLATING CLIMATE MODEL OUTPUTS FOR PUBLIC HEALTH PRACTICE IN THE UNITED STATES

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### CONTEXT

What meteorological factors are going to change? How much will they change? Will there be spatial variation? These are foundational issues for public health agencies in preparing for the impacts of climate change. In the wake of the Building Resilience Against Climate Effects (BRACE) framework developed by the US Centers for Disease Control and Prevention (CDC), health agencies in the United States are using forecasted meteorological data to monitor health vulnerabilities across populations and places resulting from climate change.

The available suite of climate model predictions – with nuances on spatial scale, range of hypothetical socioeconomic and greenhouse gas emission futures, uncertainties associated with climate predictions, voluminous data and specific data formats – make processing and interpretation of climate projection information challenging for public health professionals. There is a need for translation of complex climate science for public health practitioners for problem assessment and design of health interventions.

### NEW APPROACHES

The CDC responded to this need by collaborating with the National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information (NCEI) to facilitate access to climate projection.

Following record and near record-breaking hot summers in the recent past for regions of the US, local public health agencies have begun implementing heat response plans (83). Availability of information on the location and intensity of increases in future temperature could help agencies design targeted interventions to reduce the adverse impacts of extreme heat.

The recent National Climate Assessment used a comprehensive dataset of projections of daily temperature metrics covering the continental US until 2100. It was produced using a statistical down-scaling method that combined high-resolution observations with outputs from six different global climate models based on two (A2 and B1) future emission scenarios. The gridded output was available at one-eighth degree (approximately 14 kilometres) resolution. Projected annual future values were computed as the average of the six models for a 30-year (a standard length for expressing climatological averages) moving window around each year. Thus, the annual value for 2084 is an average of the 30-year period from 2070–2099.



# REFERENCES

## UNITED STATES

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