How do I assess exposure or impacts from hazards that have insufficient or no related data in Temperate?

A robust vulnerability assessment involves a review and analysis of multiple sources of information pertinent to your region, not just the climate data in Temperate. The climate data in Temperate is limited to precipitation and temperature indicators, which is currently the best climate data available on a national scale but might not provide all of the answers you need. Certain hazards, such as vector-borne disease and severe wind, do not show any related climate data in Temperate because there is not a nationally available dataset for these hazards at this time. Additionally, you might find that even for some hazards that do have related climate data, it is challenging to fully assess exposure and/or impacts based on temperature and precipitation trends alone.

For either of these situations, we highly suggest looking into the following sources to help you understand exposure/impacts of climate hazards.

- National Climate Assessment

  The Fourth National Climate Assessment (NCA) provides a narrative of the best available climate science and the potential impacts across the U.S. The report contains a chapter for every region of the U.S., as well as nationally relevant information that paints a bigger picture of climate change. While the U.S. Climate Explorer provides data on climate indicators, the NCA translates that data to recognizable natural hazards and the range of impacts. The NCA also broadly identifies sectors, assets, and systems that might be the most vulnerable to different hazards, which is a good place to start for identifying local vulnerabilities (discussed in a later lesson). Lastly, the NCA provides downloadable figures that can be used in your reports, if needed (along with those from the U.S. Climate Explorer).

- NOAA State Climate Summaries

  The NOAA State Climate Summaries provide a narrative climate change data by state. Different from the National Climate Assessment, these summaries are on the state scale and more straightforward. However, they are focused more on climate science, not on impacts and vulnerability.

- NOAA Sea-Level Rise Viewer:

  NOAA's Sea-Level Rise Viewer visualizes the potential impacts of different levels of sea-level rise, including the spatial extent of coastal flooding and relative depth. For some locations, the tool also provides a simulation of sea-level rise from an on-the-ground perspective. If you are unsure what level(s) of sea-level rise to assess, the National Climate Assessment provides a range of projected sea-level rise under high and low emissions scenarios.

- Local/Regional Hazard Mitigation Plans

  If your community has its own Hazard Mitigation Plan, or is included in a multi-jurisdictional Hazard Mitigation, this document typically has detailed information about natural hazards (many of which are climate-related), including current risk, previous occurrences (and their impacts), vulnerable sectors, systems, and assets; as well as existing and proposed mechanisms/measures to mitigate risk. Although most Hazard Mitigation Plans are based on current risk as opposed to projected risk, they can still provide a useful baseline of risk/vulnerability that you can use to extrapolate future impacts. In particular, Hazard Mitigation Plans might help you identify which and to what extent specific sectors, systems, assets, or populations are already vulnerable to certain hazards. Hazard Mitigation Plans can also help you assess adaptive capacity, because they describe existing/potential mechanisms or measures to address top risks.

  It might also be useful to connect with the department(s) who wrote the plan and/or have responsibility over its implementation, since there is significant overlap between hazard mitigation and climate adaptation.

  You can typically find these online with a quick search using the following keywords: "[name of community/region] hazard mitigation plan". If your community does not have a Hazard Mitigation Plan, your state almost certainly has one. Although the information will not be specific to your community, this document will typically discuss which regions are the most affected by certain hazards. This can be a good starting point to help focus your research.

- NOAA Storm Events Database

  This tool is helpful for understanding the impacts of past occurrences of a climate-related hazard in your region, which you can use as a baseline for projecting the impacts that might occur in the future if the frequency, duration, and/or intensity of that hazard is changing over time. The search can be filtered by state or county, range of time, and type of event (e.g. thunderstorm, excessive heat, wildfire, strong wind, avalanche, coastal flood, debris flow, drought, flash flood, etc). Results can be sorted by death/injury, property damage, or crop damage, which might be helpful in determining which events were most significant. To get more information on the impacts of an event, search in the archives of local news providers.