

Utah Hazard Planning Tool: Stakeholders needs and climate change information

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Introduction

Beginning in late 2020, Western Water Assessment (WWA) worked with the Southern Climate Impacts Planning Program (SCIPP) and stakeholders in Utah to develop the *Utah Hazard Planning Tool* (<https://www.colorado.edu/utah-hazard-planning-tool>). The Utah Hazard Planning (UHP) Tool is a climate information resource that provides a guide to access and use online databases of historic incidence, current risk and future projections of natural hazards in Utah. The online climate resources give information specific to Utah about avalanche, cold temperature extremes, dam failure, debris flow, drought, extreme heat, heavy rainfall and flooding, landslides, wildfire and wind events. A primary goal of the UHP Tool is to provide the best available and most specific information about how climate change will impact Utah natural hazards. To fill information gaps, where no tool to project a future natural hazard exists, the *Climate change impacts to Utah natural hazards appendix* was created. The appendix provides a brief summary of the state of scientific knowledge about how climate change will impact each natural hazard in Utah.



Post-fire debris flow in Santaquin, UT (2005).



Wildfire smoke shrouds the Utah State Capitol (July 2021).



Parleys Fire (July 2021).

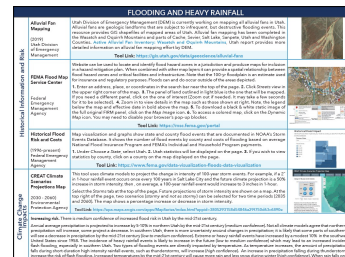


Drought in Lake Powell (2021).

The UHP Tool was developed in direct collaboration with SCIPP and borrowed conceptual ideas and design from the Simple Planning Tool that SCIPP developed for Oklahoma hazard planners in 2018. Stakeholders that work in Utah hazard planning were engaged in two online meetings to provide input to the UHP Tool in order to enhance the tool's usability. The UHP Tool is currently available on the WWA website as a report-style tool. By early summer, the UHP Tool will be converted to an online, dashboard-style tool, modeled after the Intermountain West Climate Dashboard, and hosted on WWA's website.



Utah Hazard Planning Tool



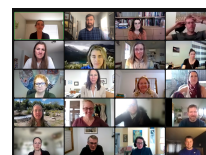
Example of hazard information provided for flooding.

Background

The UHP Tool was funded through a special funding opportunity by the NOAA Regional Sciences and Assessment (RISA) Program designed to foster collaboration between two or more RISA organizations on the topic of integrating climate change information into hazard planning. The development of the UHP Tool was a direct response to stakeholder needs. After WWA contributed climate change information to the 2019 Utah Hazard Mitigation Plan, the Utah Division of Emergency Management expressed a need for more information about the impact of climate change on future natural hazards in Utah. WWA partnered with SCIPP because of SCIPP's recent expertise in developing climate hazard information for hazard planners in Oklahoma (Simple Planning Tool, <http://www.southernclimate.org/documents/SPTOK.pdf>). WWA used the Simple Planning Tool as a starting point to develop a similar tool for Utah. Due to stakeholder needs, the UHP Tool included more extensive information about climate change impacts to hazards and an additional section summarizing the current scientific understanding of how climate change will alter the frequency, severity and geographical extent of natural hazards in the future.

Tool development and stakeholder engagement

A general format that proved useful for Oklahoma hazard planners was used to develop a draft version of the tool. WWA's extensive knowledge of regional sources of climate information was invaluable to provide the applicable content for the draft. WWA had previously worked with the Utah Division of Emergency Management on hazard planning, but needed to develop new stakeholder contacts to properly engage with the Utah hazard planning community. An online stakeholder workshop was held in March 2021 to introduce the UHP Tool, solicit feedback on the tool and to provide information about Utah natural hazards and climate change impacts. The online format was chosen due to safety concerns surrounding Covid-19 and to easily include hazard planners throughout Utah. Forty participants attended the March 2021 workshop, representing local, county, state and federal government organizations. Hazard mitigation planning occurs at the state and county levels in Utah; representatives from state and most county planning organizations were present at the workshop. Participants provided valuable input to make the UHP Tool more usable to Utah hazard planners. WWA and other speakers provided information about climate change impacts to Utah natural hazards and how climate change is currently considered in hazard planning.



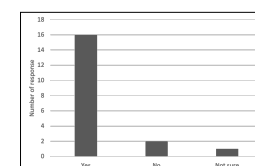
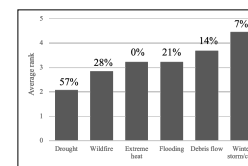
Online stakeholder workshop.

Climate change

Climate change was a key component of both the UHP Tool and the stakeholder engagement process. A primary goal of the UHP Tool was to provide the best available information about climate change impacts to natural hazards in Utah. For some hazards, such as cold temperature extremes, extreme heat, heavy rainfall and wildfire, future projections, or projections of relevant environmental conditions are available. For many natural hazards, no online tool projecting future conditions is available. The *Climate change impacts to Utah natural hazards appendix* provides information about the current scientific understanding of how climate change will impact each Utah hazard. In some cases, specific information for Utah is available, in others, information about how climate change will impact natural hazards in the western United States is provided. How climate change was communicated at each workshop was carefully considered to ensure that all participants, regardless of their personal beliefs about climate change, were engaged and felt included in discussions. Information about how climate change is considered and climate adaptation strategies used by organizations were discussed in the January 2022 workshop.

Federal	State	County	Local	Other
Bureau of Reclamation (3)	Dept of Agriculture	Beaver River AOG (2)	American Fork	Central Utah Water
FEMA	Dept of Transportation (2)	David County	Payson	Jones and DeMille
NRCS (7)	Div of Drinking Water (2)	Five County AOG	Provo (2)	Rural Community Consultants
NOAA-NWS	Div of Emergency Management (15)	Mountainland AOG	Salt Lake City	
US Forest Service (4)	Div of Forestry, Fire and State Lands (2)	Wasatch County (2)		
	Div of Water Resources	Wayne County		
	Governor's Office			
	Utah Geological Survey (2)			

Organizations, by type, that participated in the two UHP workshops. There were 40 participants in the March 2021 workshop and 45 participants in the January 2022 workshop. A total of 55 people from 26 organizations participated.



Results of two poll questions from the January 2022 UHP Tool workshop. The bar chart on the left displays how participants ranked the importance of each hazard; the percentage of participants that ranked each hazard as most important is above each bar. The bar chart on the right shows how many participants considered climate change in their planning activities.

Future work

Small group discussions from the January 2022 UHP Tool workshop helped gain an understanding of what is needed to more effectively consider climate change in Utah hazard planning. WWA plans to collaborate with the Utah Division of Emergency Management (DEM) on the 2024 update to the Utah Hazard Mitigation Plan and will assist in DEM's efforts to integrate climate change into planning.