



Drought Data on CDC's Tracking Network

National Drought & Public Health Summit

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Environmental Health Tracking Section

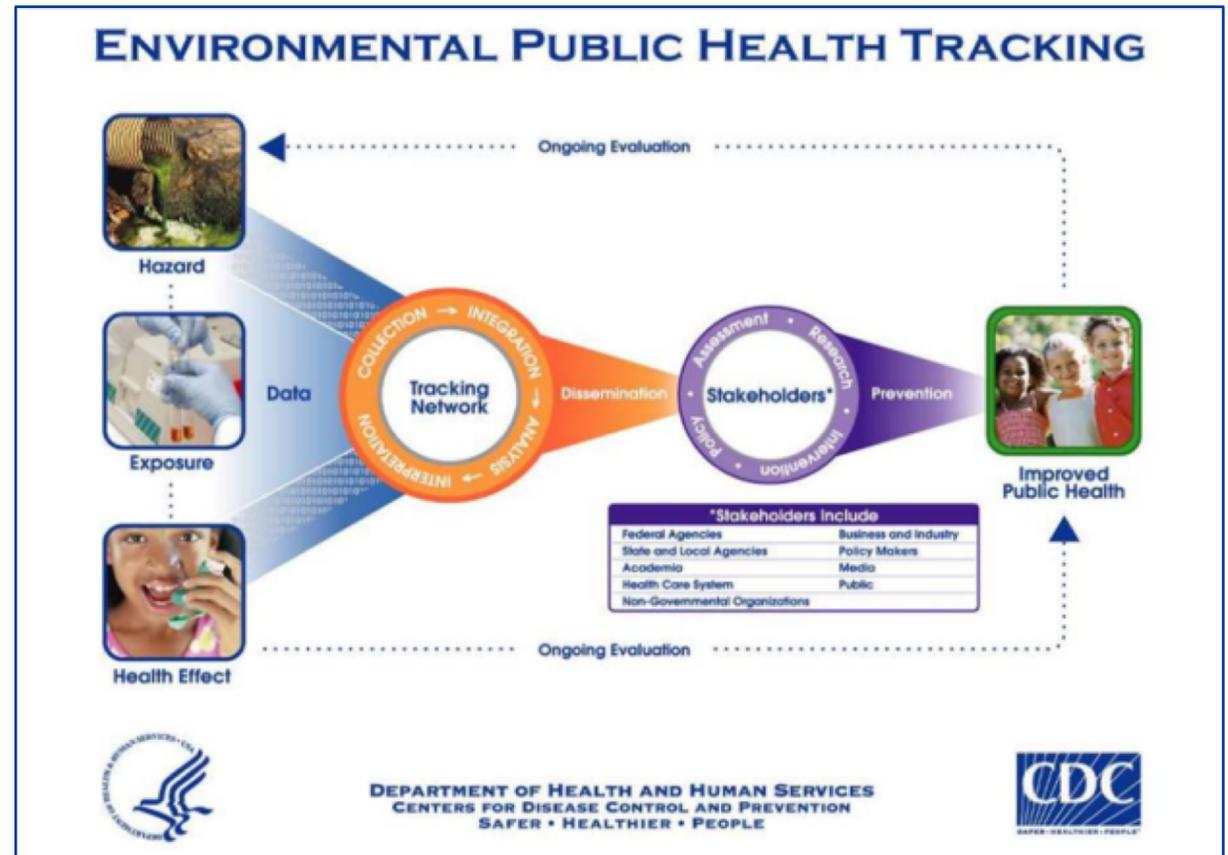
Division of Environmental Health Science and Practice

National Center for Environmental Health
Agency for Toxic Substances and Disease Registry



Environmental Public Health Tracking

- **Vision:** Healthy informed communities
- **Mission:** To provide information from a nationwide network of integrated health and environmental data that drives actions to improve the health of communities





ENVIRONMENTAL PUBLIC HEALTH

TRACKING

CONNECTS ENVIRONMENT & HEALTH INFORMATION

Environmental



- Air Quality
- **Drought**
- Community Water
- Flood Vulnerability
- Community Design
- Temperature Distribution

Pesticide Exposures •
Toxic Substance Releases •
Other Environmental Chemicals •

Exposures



Health Effects



- Asthma
- Cancer
- Heart Disease
- Heat Stress Illness
- Childhood Lead Poisoning
- Developmental Disabilities
- Carbon Monoxide Poisoning
- Reproductive and Birth Outcomes

Population Characteristics



Lifestyle Risk Factors •
Socioeconomics •
Demographics •
Vulnerabilities •



Tools and Resources

ACCESS THE NEW DATA EXPLORER

View & download all data
Maps • Charts • Tables

GO



INFO BY LOCATION

Data for you!
View data by county or zip code

GO



STATE & LOCAL TRACKING PROGRAMS

Websites
Grantee Profiles
Data Highlights

GO



CDC Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People.™

SEARCH

CDC A-Z INDEX

Downloadable Datasets

National Environmental Public Health Tracking > Resources > Downloadable Datasets

Downloadable Datasets

Environments +
Health Effects +
Population Health +
Quick Links +
Resources -
Communication Tools +
Training
Join our List-serv
Document Library
Quick Reports +
Technical Notes
Scientific Publications
Tracking API Help

Datasets for Download

The Tracking Network provides downloadable data in two formats. You can query and view data for each Tracking Network content area in maps, tables, and charts through the [Data Explorer](#), and you can download datasets for the content areas listed on this page. Unlike Data Explorer data, the datasets presented here for download have not been aggregated spatially or temporally.

Data included below is subject to be changed, updated or reviewed at any time.

Drought

Each of these datasets provide data at the county level. The first three datasets include monthly index data from 1895-present. The U.S. Drought Monitor dataset features weekly drought monitor values (ranging from 0-4) from 2000-present.

Additional information is included in the readme.txt located inside the download .zip.

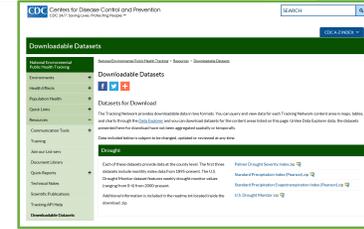
Palmer Drought Severity Index .zip
Standard Precipitation Index (Pearson) .zip
Standard Precipitation Evapotranspiration Index (Pearson) .zip
U.S. Drought Monitor .zip

ARE YOU A DEVELOPER?

ACCESS TRACKING DATA USING OUR NEW API



Drought Data



Dataset	Background	Source*	Geographic Scale	Time Period
Palmer Drought Severity Index (PDSI)	<ul style="list-style-type: none"> Uses readily available temperature and precipitation data to estimate relative dryness Captures basic effect of global warming on drought through changes in potential evapotranspiration 	National Oceanic and Atmospheric Administration (NOAA)	County level for contiguous US and DC	1895-2016
Standardized Precipitation Index (SPI)	<ul style="list-style-type: none"> Characterizes meteorological drought on a range of timescales Related to soil moisture on short timescales Related to groundwater and reservoir storage on longer timescales 	National Oceanic and Atmospheric Administration (NOAA)	County level for contiguous US and DC	1895-2016
Standardized Precipitation Evapotranspiration Index (SPEI)	<ul style="list-style-type: none"> Extension of SPI Accounts for both precipitation and potential evapotranspiration Captures the main impact of increased temperatures on water demand 	National Oceanic and Atmospheric Administration (NOAA)	County level for contiguous US and DC	1895-2016
U.S. Drought Monitor (USDM)	<ul style="list-style-type: none"> Weekly map of drought conditions Based on measurements of climatic, hydrologic and soil conditions as well as reported impacts and observations from more than 350 contributors around the US 	National Oceanic and Atmospheric Administration (NOAA); U.S. Department of Agriculture (USDA); National Drought Mitigation Center (NDMC)	County level for contiguous US and DC	2000-2016

* Provided by the North Carolina Institute for Climate Studies (NCICS)





Drought Indicators and Measures

Indicator	Measure	Data Source	Geographic Scale	Time Period
Drought Duration and Severity (Monthly)	Number of months of mild drought or worse per year	Standardized Precipitation Evapotranspiration Index (SPEI) ¹	National by county, State by county	1979-2016
	Maximum consecutive months of mild drought or worse	SPEI	National by county, State by county	1976-1980, 1981-1985, 1986-1990, 1991-1995, 1996-2000, 2001-2005, 2006-2010, 2011-2015
Drought Duration and Severity (Weekly)	Number of weeks of moderate drought or worse per year	U.S. Drought Monitor (USDM) ²	National by county, State by county	2000-2016
	Maximum consecutive weeks of moderate drought or worse	USDM	National by county, State by county	2001-2005, 2006-2010, 2011-2015

¹SPEI is a monthly index designed to take both precipitation and potential evapotranspiration into account, capturing the impact of increased temperatures on drought conditions.

²USDM is a weekly map of drought conditions based on measurements of climatic, hydrologic, and soil conditions as well as reported impacts and observations from more than 350 experts around country.





How to Query Drought Measures in the Data Explorer

STEP 1: CONTENT

Drought

Drought Duration and Severity (Monthly)

Maximum number of consecutive months of mild drought

STEP 2: GEOGRAPHY TYPE

National By County



STEP 3: GEOGRAPHY

All Counties

STEP 4: TIME

All Years

- 2011-2015
- 2006-2010
- 2001-2005
- 1996-2000
- 1991-1995
- 1986-1990
- 1981-1985
- 1976-1980

STEP 5: ADVANCED OPTIONS

Optional

- Severity
 - Moderate drought or worse
 - Severe drought or worse
 - Extreme drought

Disclaimer

Clear Selections

GO 

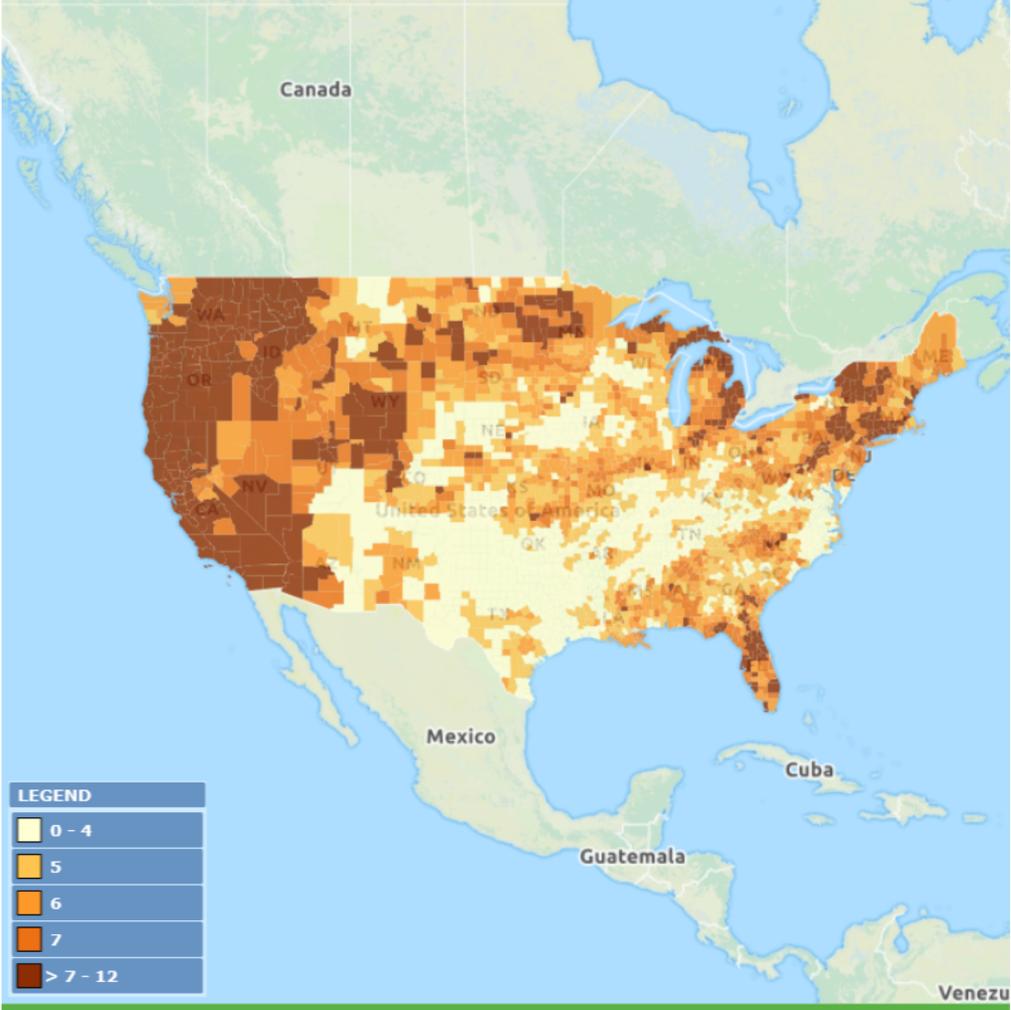
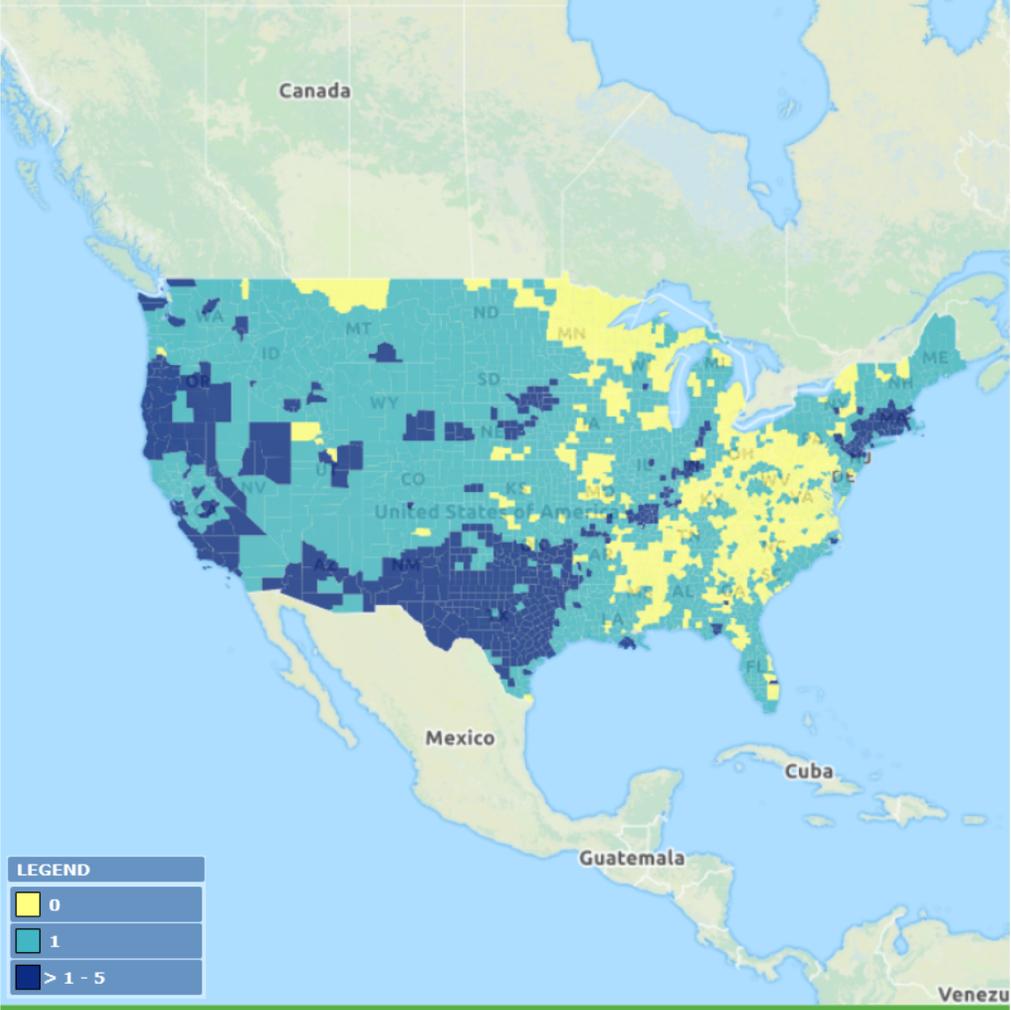


Drought Duration and Severity (Monthly)

ACCESS THE NEW DATA EXPLORER

View & download all data
Maps - Charts - Tables

GO



DROUGHT | DROUGHT DURATION AND SEVERITY (MONTHLY) | MAXIMUM NUMBER OF CONSECUTIVE MONTHS OF MILD DROUGHT OR WORSE | ALL COUNTIES | 2011-2015 | Extreme drought

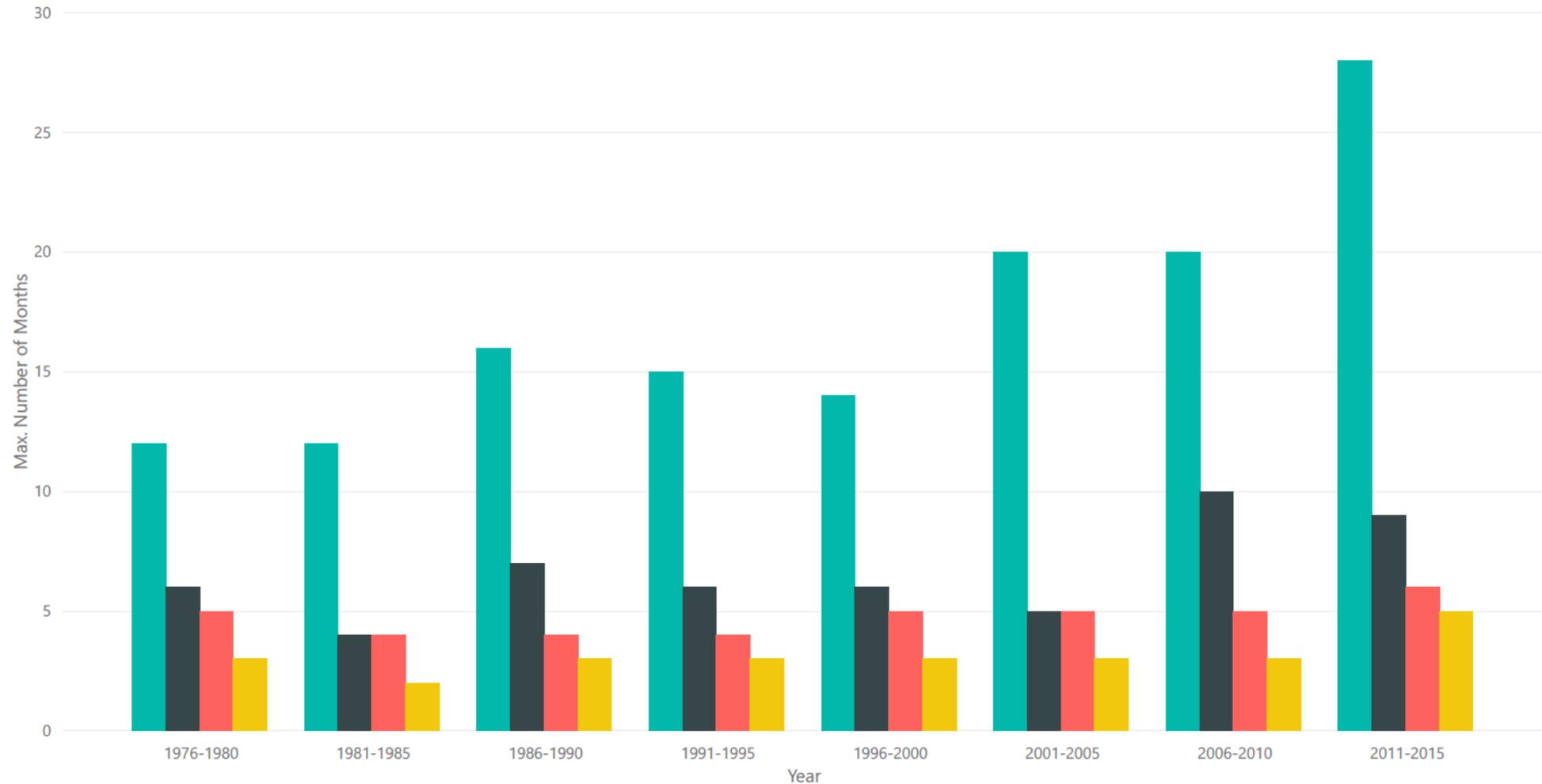


DROUGHT | DROUGHT DURATION AND SEVERITY (MONTHLY) | NUMBER OF MONTHS OF MILD DROUGHT OR WORSE PER YEAR | ALL COUNTIES | 2015

Droughts in the U.S. are getting worse.

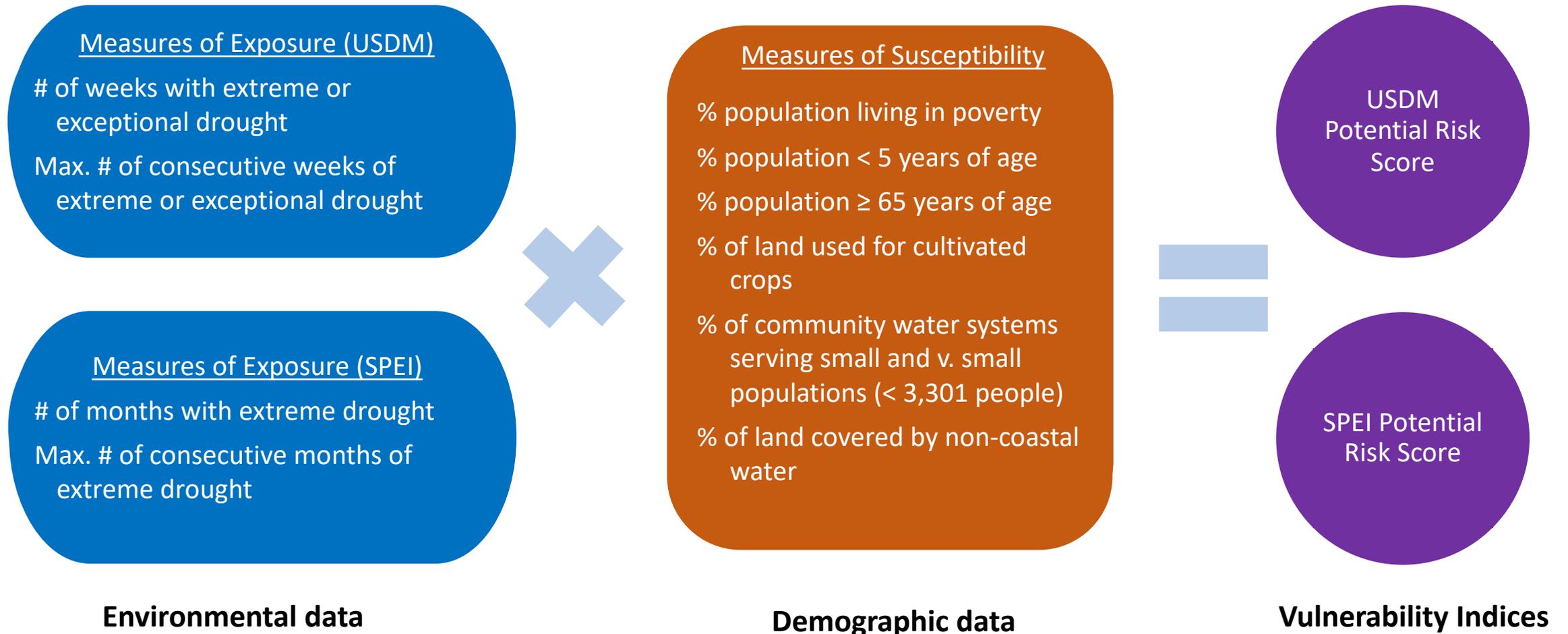
Max. Number of Consecutive Months in Drought for U.S. Counties

Severity ● Mild drought or worse ● Moderate drought or worse ● Severe drought or worse ● Extreme drought



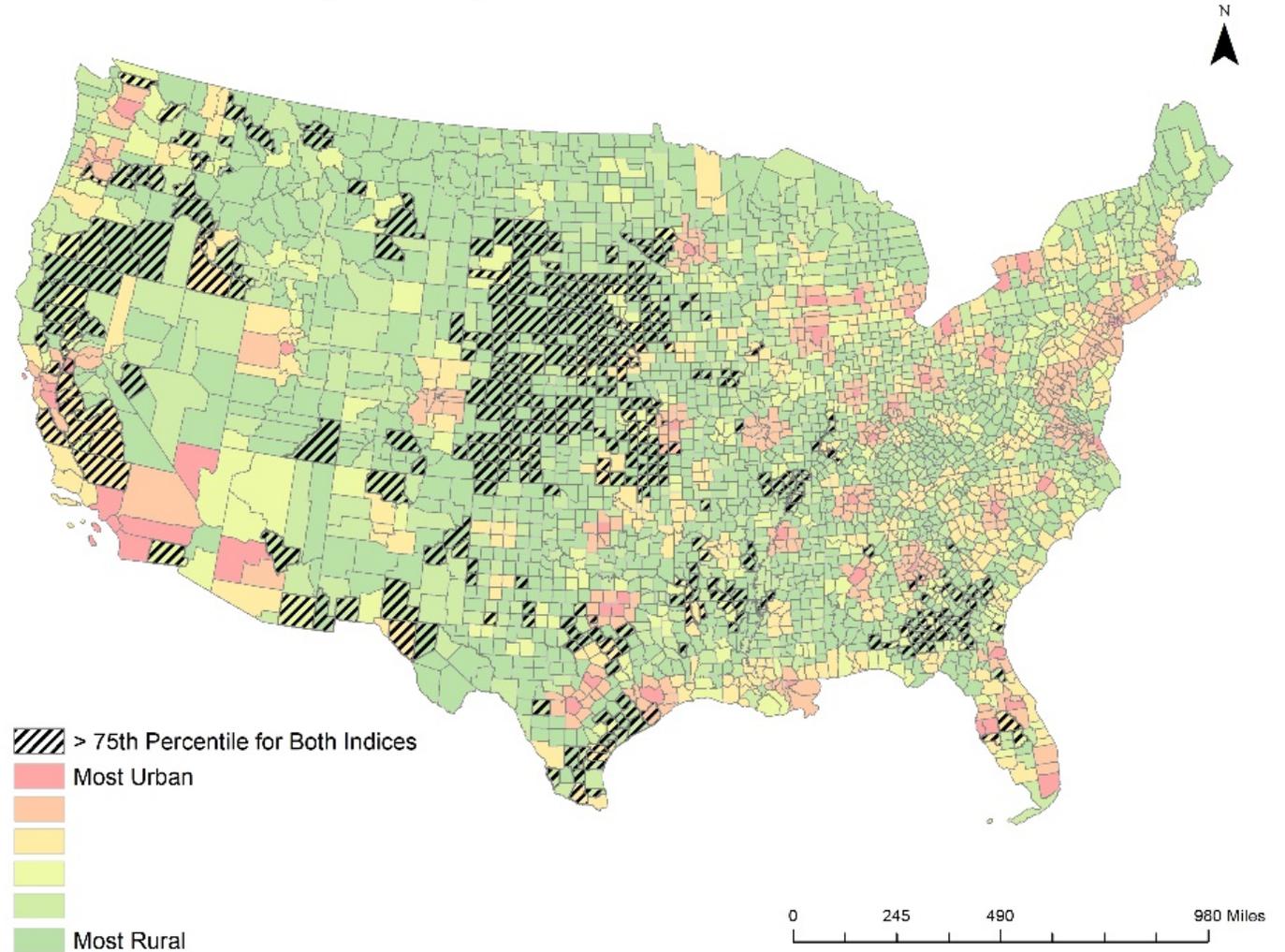
Data based on Standardized Precipitation Evapotranspiration Index (SPEI) and exclude Alaska and Hawaii.

We created two indices to identify which counties had the highest potential risk of negative health effects from the most severe forms of drought in 2012-2016.



The most at-risk counties tend to be rural and located in three main regions: west, central, and southeastern U.S.

Most At-Risk Counties Based On Both Indices



Query the data here:

<https://bit.ly/2qyJevl>

Download the raw data here:

<https://bit.ly/2DwjwAu>

Tracking in Action: Informing Decisions and Improving Public Health



The Tracking Network helps public health professionals:

- **Discover** emerging health or environmental issues, **Provide** data to decision makers, **Identify** at risk populations

Drought-related Public Health Actions

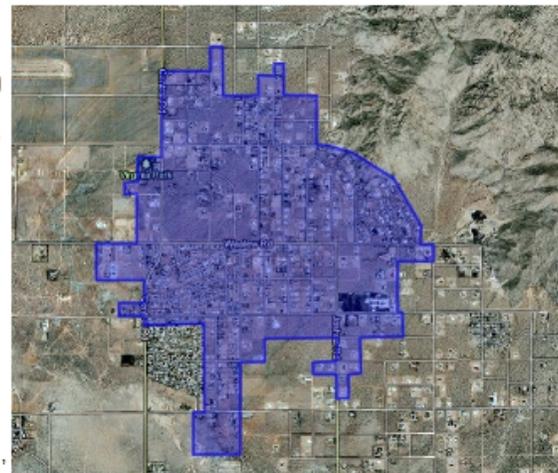
Maine Tracking: Residents Protected from Manganese- Contaminated water during drought



California Tracking: Water boundary data tool used for emergency response and planning for drought in Tulare County

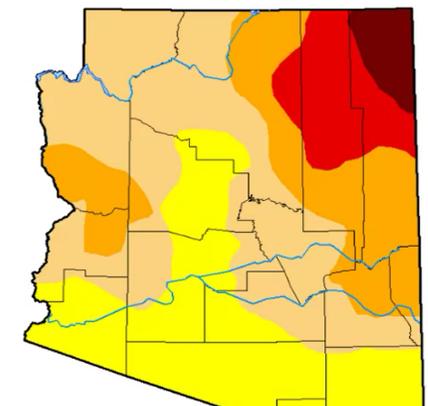
Development of a Web-Based Tool to Collect and Display Water System Customer Service Areas for Public Health Action

Michelle Wong, MPH; Craig Wolff, MS; Natalie Paul English, PhD, MPH



Arizona Tracking: Assessed drought, vulnerability, and health impacts in Arizona through the BRACE Framework to inform the Arizona Climate and Health Adaptation Plan.

U.S. Drought Monitor
Arizona



Thank you!

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The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official view of the Centers for Disease Control and Prevention.

