

## Data Sources

Data Sources are grouped based on the following categories. Scroll through the document or click on the category to jump to those resources.

[Climate Data](#)

[Climate Data shown creatively](#)

[Plants and Animals](#)

[Human Health](#)

[Environmental Justice / Socio-economic data](#)

[Weather](#)

[Water](#)

[Agriculture](#)

[Other](#)

### Climate Data

[Climate Explorer](#)

Built to accompany the U.S. Climate Resilience Toolkit, the Climate Explorer offers graphs and maps of observed and projected temperature, precipitation, and related climate variables for every county in the contiguous United States. The [development version of Climate Explorer's Charts](#) offers data readouts. [This StoryMap](#) walks new users through the tool.

[Climate at a Glance](#)

From global to city scale, look at temperature and precipitation data back to 1895 in some locations.

[Climate Normals](#)

This dataset contains daily and monthly Normals of temperature, precipitation, snowfall, heating and cooling degree days, frost/freeze dates, and growing degree days calculated from observations at approximately 9,800 stations operated by NOAA's National Weather Service.

[State Climate Summaries](#)

These State Climate Summaries were released in 2017 to meet a demand for state-level information in the wake of the Third U.S. [National Climate Assessment](#). A rolling update of the full set of summaries is currently underway in 2019. The summaries cover assessment topics directly related to NOAA's mission, specifically historical climate variations and trends, future climate model projections of climate conditions during the 21st century, and past and future conditions of sea level and coastal flooding.

[Gallery on Climate Central](#)

Various visualizations showing climate change data.

## Climate Data

### [AdaptVA](#)

Website links to a variety of data sources to help plan for climate change impacts.

### [U.S. Climate Resilience Toolkit](#)

The Tools tab on this website links to a large collection of data tools to help plan responses to climate change. You are able to filter the tools down by topic and region.

### [NOAA Sea Level Rise Viewer](#)

A data visualization tool where you can view sea level rise and potential coastal flooding impact areas and relative depth. Built in are additional components like local scenarios, mapping confidence, marsh migration, social vulnerability, and high tide flooding.

### [Climate.gov](#)

NOAA Climate.gov provides science and information for a climate-smart nation. Americans' health, security, and economic well-being are closely linked to climate and weather. People want and need information to help them make decisions on how to manage climate-related risks and opportunities they face. NOAA Climate.gov is a source of timely and authoritative scientific data and information about climate. Our goals are to promote public understanding of climate science and climate-related events, to make our data products and services easy to access and use, to provide climate-related support to the private sector and the Nation's economy, and to serve people making climate-related decisions with tools and resources that help them answer specific questions.

### [NOAA Digital Coast](#)

The Digital Coast was developed to meet the unique needs of the coastal management community. The website provides not only coastal data, but also the tools, training, and information needed to make these data truly useful. Content comes from many sources, all of which are vetted by NOAA. Data sets range from economic data to satellite imagery. The site contains visualization tools, predictive tools, and tools that make data easier to find and use. Training courses are available online or can be brought to the user's location. Information is also organized by focus area or topic.

### [Science on a Sphere](#)

Science On a Sphere (SOS) is a room sized, global display system that uses computers and video projectors to display planetary data onto a six foot diameter sphere, analogous to a giant animated globe. Researchers at NOAA developed Science On a Sphere as an educational tool to help illustrate Earth System science to people of all ages. Animated images of atmospheric storms, climate change, and ocean temperature can be shown on the sphere, which is used to explain what are sometimes complex environmental processes, in a way that is simultaneously intuitive and captivating.

### [Climate Interactive](#) - [En Roads Climate Simulation](#)

## Climate Data

En-ROADS is a transparent, freely-available policy simulation model that gives everyone the chance to design their own scenarios to limit future global warming. You can try your own experiments and assumptions, and get immediate feedback on the likely impacts.

### [NASA Global Climate Change Vital Signs of the Planet](#)

Great website to explore - many cool climate data visualizations

### [Detecting Climate Change in Chesapeake Bay](#)

A StoryMap that includes data and summaries on climate change impacts in the Chesapeake Bay.

### [Billion-Dollar Weather and Climate Disasters](#)

This tool tracks the weather and climate disasters where overall damages/costs reached or exceeded \$1 billion since 1980.

### [MARISA - A NOAA Mid-Atlantic RISA Team](#)

The [Climate Data Tools](#) tab includes tools and maps showing changes in precipitation, temperature, hurricanes, severe storms and damage to crop and property.

### [Greenhouse Gas Inventory Data Explorer](#)

See greenhouse gases by sector.

## Climate Data shown creatively

### [Climate Stripes](#) - Ed Hawkins

See the climate strips by country or state.

### [Climate Spirals](#) - Ed Hawkins

### [Earth.nullschool.net](#)

A mesmerizing animation of the globe showing how air and water circulate.

### [Artist Jill Pelto](#)

“Scientific research and data fuel the content of my artwork. I create pieces that raise awareness about interesting and important environmental topics. The key topic in my portfolio is climate change data: melting glaciers, rising sea level, threatened species. I hope to cover both positive and negative issues that depict the reality of our current ecosystem.”

### [Climate Change Science in Haikus by Gregory Johnson](#)

### [Temperature Anomalies by Country, 1880 to 2017](#)

## Climate Data shown creatively

### [The Tempestry Project](#)

Showing climate data with yarn

### [3 Millimeters by Greg Kahn](#)

Photography of rising sea level impacts on Maryland's Eastern Shore

### [Audubon Murals](#)

Murals of birds at risk because of climate change

### [Weather Radials](#)

An infographic on heat waves and snow storms in 35 cities around the globe

## Plants and Animals

### [Journey North Maps](#)

Goes back to 1997 and includes observations for: Signs of Spring, Bald Eagles, Barn Swallows, Daylight, Earthworms, Frogs, Gray Whales, Hummingbirds, Ice-Out, Leaf-Out, Loon, Maple Syrup, Milkweed, Monarchs, Orioles, Red-winged Blackbird, Robin, and Tulips

### [USA National Phenology Network Visualization Tool](#)

Tones of data for plants and animals from across the country but the variety and quantity differ based on location so you'll need to play around with the tool.

### [eBird Data](#)

Global data on birds going back to 1900. You will need a free account to view all data.

### [Feederwatch Data](#)

Data of birds visiting feeders from across Canada and the United States. Data goes back to the late 1980s.

### [NOAA Annual Fisheries Landing data](#)

Commercial and Recreational fisheries data from across the United States. You can select date ranges back to 1950, focus in by state or NWFS region and select one or multiple species.

### [iNaturalist](#)

Explore data posted from around the world by community scientists.

### [Audubon Christmas Bird Count](#)

## Plants and Animals

Publications and data from the annual Christmas Bird Count going back to 1901.

### [Audubon Survival by Degrees](#)

Shows how ranges for different bird species will change and their vulnerability score based on future temperature increases.

- [Birds and Climate Visualizer](#) filters the data to your zip code

### [Forest Service Climate Change Atlas](#)

Maps showing potential changes to the ranges for tree and bird species.

### [BirdCast](#)

Bird migration forecast maps

### [i-Tree Landscape](#)

Offering more than just beauty and shade, trees provide intangible benefits, such as removal of atmospheric carbon dioxide and pollution, stormwater reduction, temperature modification, and more. i-Tree Landscape allows you to explore tree canopy, land cover, and basic demographic information in a location of your choosing

### [i-Tree Canopy](#)

Estimate tree cover and tree benefits for a given area with a random sampling process that lets you easily classify ground cover types.

## Human Health

### [National Allergy Bureau's Pollen Counts](#)

To review historical data you select a pollen count station and then just click through months. You can select a day to learn about all the information gathered.

### [AirNOW](#)

Type in your city, zip or state to learn the current air conditions.

### [World Air Pollution Monitoring](#)

Real-time air quality index visual map.

### [EPA Outdoor Air Quality Data - Multiyear Tile Plot](#)

Select from all air quality data or individual pollutants from as far back as 1980 for select cities or US counties.

### [EPA Outdoor Air Quality Data - Yearly Air Quality Tracker](#)

## Human Health

See a year's worth of data (ozone, PM2.5 (particulate matter) or both) for a select city or US county from.

### [Maryland Food System Map](#)

Many base layers around food, demographics, health, and more.

### [EPA EnviroAtlas](#)

Human health and well-being are closely tied to the environment, which provides benefits such as clean water, clean air, and protection from natural hazards, also known as ecosystem goods and services. EnviroAtlas provides geospatial data, easy-to-use tools, and other resources related to ecosystem services, their chemical and non-chemical stressors, and human health. [Single-page instructions.](#)

- What does it mean? Check out [EPA Eco-Health Relationships](#). The interactive tool illustrates scientific evidence for linkages between human health and ecosystem services.

## Environmental Justice / Socio-economic data

### [EPA EJ Screen](#)

EPA's Environmental Justice Screening and Mapping Tool. This tool allows you to select from various Environmental Indicators, Demographic Indicators, and EJ Indexes and create side-by-side maps to better understand the relationship between variables. The tool does not include historical data, only current data.

### [Virginia Vulnerability Viewer](#)

Map divided by census tracts. Shows social vulnerability index score, vulnerable housing classification and hazardous/toxic index score.

### [Chesapeake Bay Environmental Justice and Equity Dashboard](#) (DRAFT)

"These data reflect demographic data of underrepresented populations, environmental justice and public health issues, quality of life concerns, and other data important for other Outcomes of the Chesapeake Bay Watershed Agreement of 2014."

## Weather

### [Weather Underground](#)

Current and predicted weather and radars. Under "More" you can find historical weather data.

## Weather

[CoCoRaHS](#) (Community Collaborative Rain, Hail & Snow Network)

View precipitation data from across the country back to the late 1990's in some locations. Also, sign up to be an observer and set up your own station.

## Water

[NOAA Tides & Currents](#)

Explore tide stations across the US. Date ranges unique to each station. Data includes recorded tides, tide predictions and water conditions.

[Chesapeake Bay Interpretive Buoy System](#)

Get real-time and historical data back to 2007 from the buoys dotting the Chesapeake Bay. The data available for each buoy is different based on when it was first launched and weather conditions.

[Chesapeake Bay Watershed Data Dashboard](#)

Water quality data from the Chesapeake Bay and its tributaries going back to 1985.

[NOAA Sea Level Rise Viewer](#)

A data visualization tool where you can view sea level rise and potential coastal flooding impact areas and relative depth. Built in are additional components like local scenarios, mapping confidence, marsh migration, social vulnerability, and high tide flooding.

[WikiWatershed](#)

Includes multiple tools that let you model storms and runoff and learn about your watershed including some water quality data.

[Maryland Eyes on the Bay](#)

Links to stations throughout the bay and tributaries sharing real-time data.

[Maryland Coastal Atlas](#) and [MERLIN](#)

This resource has the shoreline change images and data discussed during the workshop. You have to dig into the layer list to find the shoreline rates of change layer.

[NJFloodMapper](#)

Shows current and predicted flooding in NJ. Ability to add different base layers to learn how flooding will impact people and natural areas.

[Chesapeake Bay Report Card](#)

## Water

Includes water quality data and an overall health score for the Chesapeake Bay and its tributaries going back to 1986.

### [Water Quality Watch from USGS](#)

Real-time water quality of surface water in the United States.

### [EPA How's My Watershed](#)

Learn about waters monitored near you and results around swimming, eating fish, aquatic life and drinking water.

### [Middle Atlantic River Forecast Center](#)

Monitors and forecasts river heights across the Mid-Atlantic.

### [James River Watch, Virginia](#)

Water quality data for the river.

### [Shoreline Assessment Mapper for Virginia](#)

Wide range of data about the natural and human-created physical structures near shorelines.

## Agriculture

### [USDA National Agricultural Statistics Service - Quick Stats](#)

An amazing amount of data for the United States and Territories with multiple levels of data filters. You can filter by agricultural sector down to individual crops. Data goes back to the 1800s for some areas and crops.

## Other

### U.S. Energy Information Administration - [Annual Energy Review](#)

Information from states and ability to breakdown by energy source. Also check out the [State Electricity Profiles](#) for data back to 1996.

### [City of Baltimore: Maps Gallery](#)

The maps allow you to explore some data sets based on locations within Baltimore.

### [Yale Climate Opinion Maps 2020](#)

"These maps show how Americans' climate change beliefs, risk perceptions, and policy support vary at the state, congressional district, metro area, and county levels."



## Other

### [GapMinder](#)

“Gapminder Worldview Upgrader is a fun educational tool created to help people rid themselves of common systematic misconceptions about global development.”

### [Delaware Geological Survey](#)

Data sets from geological and water surveys across Delaware.

### [Data Platforms from the World Resources Institute](#)

These platforms enable users to monitor forests with satellites, track the drivers of climate change, understand indigenous communities' land rights, plan for water scarcity, examine the cross-section of global environmental issues and more.

### [Global Monitoring Laboratory](#)

Depending on the station location, data could include: carbon cycle gases, halocarbons and trace gases, aerosols, solar radiation, ozone and meteorology.

Dance Exchange

Moving Field Guide

### [Maryland MERLIN](#)

A map tool with many based layers like...historical shorelines, natural landscapes and resources, property lines, sea level vulnerability

### [Google Timelapse Maps](#)