

Sea Grant Climate Change Impacts in Virginia: Assembling Natural Resource Data Records as Tools to Assess Continuing Trends

Available Data Sets and Graphs of Data

Category	Data type	Source	URL or Publication	Dates	Format	Notes
Meteorological	Heating degree days	NOAA Satellite and Information Service	https://www7.ncdc.noaa.gov/CDO/CDODivisionalSelect.jsp	1983-present	Downloadable data	Also soil temp, snowfall, wind movement, freeze date
	Cooling degree days	NOAA Satellite and Information Service	https://www7.ncdc.noaa.gov/CDO/CDODivisionalSelect.jsp	1983-present	Downloadable data	
	Departures from normal Precipitation and Temperature	NOAA Satellite and Information Service	https://www7.ncdc.noaa.gov/CDO/CDODivisionalSelect.jsp	1983-present	Downloadable data	
	Mean temperature	US Historical Climatology Network	http://cdiac.ornl.gov/epubs/ndp/ushcn/ushcn.html	1895-2008?	Downloadable data & Graphs prepared on website	Dates available vary by station, may have to download each station separately
	Total Precipitation	US Historical Climatology Network	http://cdiac.ornl.gov/epubs/ndp/ushcn/ushcn.html	1895-2008?	Downloadable data & Graphs prepared on website	Dates available vary by station, may have to download each station separately
Water	Salinity	CB Program Water Quality	http://www.chesapeakebay.net/data_waterquality.aspx	1984-present	Downloadable data	
	Water temperature--Mouth of the Chesapeake Bay	NOAA	http://www.ndbc.noaa.gov/station_history.php?station=chlv2	1984-2009	Downloadable data	
	Water temperature--York River	VIMS	STAC Climate Change report	1950-2009	Graph	
	Water temperature--York River	VIMS		1950-2008	Downloadable data	Can obtain from Gary Anderson
	Water temperature--Throughout CB	CB Program Water Quality	http://www.chesapeakebay.net/data_waterquality.aspx	1984-present	Downloadable data	
	Water temperature--Main stem bay	CB Program Water Quality	STAC Climate Change report	1985-2008	Graph	
	Stream flow	CB Program Water Quality	http://www.chesapeakebay.net/data_waterquality.aspx	1984-present	Downloadable data	
	Annual Mean Inflow to CB	USGS	https://md.water.usgs.gov/waterdata/chesinflow/	1937-2007	Graph	
	Water quality parameters	CB Program Water Quality	http://www.chesapeakebay.net/data_waterquality.aspx	1984-present	Downloadable data	Variety of different parameters, DIC, DIN, Chl, Fecal Coliforms, other C/N
	Water quality parameters - Riverine	USGS	https://md.water.usgs.gov/waterdata/chesinflow/	1989-present	Downloadable data	TSS, TSS, TN, DIN, TP
	Water quality parameters - Virginia Estuarine and Coastal Observing System (VECOS)	VIMS	http://www.vims.edu/vecos/	varies depending upon data collection and location ~2003 to present	Downloadable data	2 types of data collection: continuous monitoring at fixed stations and dataflow (surface water quality mapping system) 6 parameters: DO, salinity, temperature, pH, turbidity, chlorophyll
	Drought monitor	US Drought Monitor; National Drought Mitigation Center; University of Nebraska-Lincoln	http://droughtmonitor.unl.edu/	2000-2010	Downloadable data	Data in the form of tables
	Drought information and water resources	Virginia Department of Environmental Quality	http://www.deq.virginia.gov/Programs/Water/WaterSupplyWaterQuantity/Drought.aspx	varies	Downloadable data	Contains links to several other useful sites with drought and water resources information; e.g. links to USGS waterwatch site (http://waterwatch.usgs.gov/?state=va&map_type=real&web_type=map) where historic graphs have median past streamflow conditions from 1900 to 2008 (http://waterwatch.usgs.gov/?m=statesum&r=va&w=real%2Cmap)
	Ground Water Climate Response Network	US Geological Survey (USGS)	https://groundwaterwatch.usgs.gov/statemap.asp?sc=51&sa=VA	varies--some wells have more than 30 years of data	Data available from http://nwis.waterdata.usgs.gov/usa/nwis/gwlevels/	tables of site statistics and graph of ground water data

Fish	Blue Crabs (Landings)	NOAA National Marine Fisheries	http://www.st.nmfs.noaa.gov/st1/commercial/index.html	1950-2008	Downloadable data	
	Oysters (Landings)	NOAA National Marine Fisheries	http://www.st.nmfs.noaa.gov/st1/commercial/index.html	1950-2008	Downloadable data	
	Molluscs (oysters, hard clams)	VIMS Molluscan Ecology Program	http://web.vims.edu/mollusc/monrestoration/memonrest.htm	varies	More recent data in the form of downloadable tables in pdf format; for older data would need to refer to paper reports/publications	older data need to be extracted from hard copy reports and publications; e.g. annual oyster monitoring reports range from 1974 to 2010
	Winter flounder (Landings)	NOAA National Marine Fisheries	http://www.st.nmfs.noaa.gov/st1/commercial/index.html	1950-2008	Downloadable data	
	Fish and Crab abundances	VIMS Trawl and Seine Surveys	http://www.vims.edu/research/departments/fisheries/programs/juvenile_surveys/data	1968-present	Indices of abundance	Requests for data must be submitted directly to fisheries department
Forestry	Acres of forestland	VA Dept of Forestry	http://www.dof.virginia.gov/gis/download/index.htm	1630-2001	Table	Only various years available.
	Acres of forestland	USDA Forest Inventory and Analysis data	http://fia.fs.fed.us/slides/major-trends.pdf	1630-2000	Downloadable data	Only various years available. Saved as excel file--can combine with VA Dept of forestry data for slightly more data points
	GW Forest, Hardwood, softwood growth	USDA Forest Inventory and Analysis data	http://fia.fs.fed.us/slides/major-trends.pdf	1987-2002	Downloadable data	Only various years available. Saved as excel file
	Virginia specific Hardwood, Softwood reports	VA Dept of Forestry	Select publications: Virginia's Forests 1992, Virginia's Forests 2007	varies	Printed data and graphs	Could extract data from publications, but not in easy to access format
	Biomass & Standing crops	USDA Forest Inventory and Analysis data-Southern online estimator	http://fia.fs.fed.us/tools-data/other/default.asp	2000-present?	Downloadable data	Can't seem to access data, not clear if it exists
	Virginia-wide tree counts, biomass, growth, carbon, removals and mortality	USDA Forest Inventory and Analysis data-FIDO 2.0 mapmaker	http://fiatools.fs.fed.us/fido/standardrpt.html	1977-2008	Reports	Only various years available.
Crops	Peanuts (planted, harvested, yield)	USDA-NASS quick stats	https://www.nass.usda.gov/Statistics_by_Subject/index.php?sector=CROPS	1866-present	Downloadable data	years available vary by crop
	Soybeans (planted, harvested, yield)	USDA-NASS quick stats	https://www.nass.usda.gov/Statistics_by_Subject/index.php?sector=CROPS	1866-present	Downloadable data	years available vary by crop
	Corn (planted, harvested, yield)	USDA-NASS quick stats	https://www.nass.usda.gov/Statistics_by_Subject/index.php?sector=CROPS	1866-present	Downloadable data	years available vary by crop
	Wheat (planted, harvested, yield)	USDA-NASS quick stats	https://www.nass.usda.gov/Statistics_by_Subject/index.php?sector=CROPS	1866-present	Downloadable data	years available vary by crop
Aquatic resources	SAV	VIMS	http://web.vims.edu/bio/sav/?svr=www	1971-2008	Interactive & static maps	Not all years available
	SAV	VIMS	http://web.vims.edu/bio/sav/gis_data.html	1971-2008	Downloadable data	Not all years available
	Benthic	CB Program	http://www.chesapeakebay.net/data/downloads/baywide_benthic_database	1975-Present	Downloadable data	
	Plankton	CB Program	http://www.chesapeakebay.net/data/downloads/baywide_cbp_plankton_database	1984-Present	Downloadable data	

Other resources	Invasive species, plants & insects	Pest tracker, NAPIS	http://pest.ceris.purdue.edu/index.php	2000-2008	Graphs	
	Invasive species in CB	SERC	http://invasions.si.edu/nemesis/cbsearch.html	varies	text	Would be hard to extract data, but info is very thorough
	Eight-hour ozone exceedances	VA DEQ	http://www.deq.virginia.gov/Programs/Air/AirQualityForecasting/Eighthourozoneexceedances.aspx	1990-2008	Data tables	
	Colonial water bird survey	VAFWIS	http://vafwis.org/fwis	1977-2003	Data tables	Must log in, data only for various years, organized spatially
	Hourly meteorological data; hurricane and storm records; precipitation data; surficial and groundwater well data; water quality data; marsh grass biomass and cover data/ dune biomass; historic shorelines and upland/marsh boundaries; EcoTrends-Socioeconomic Catalog data for the VCR/LTER Airshed; small mammals; birds	Virginia Coast Reserve (VCR) Long-Term Ecological Research (LTER) Database	http://www.vcr.lter.virginia.edu/cgi-bin/browseData.cgi	varies	Downloadable data	Research sites located on ocean-side of Eastern Shore; must request data through online form; time span of data collection varies for each project
	Water column data, sediment contaminants and toxicity data, and benthic macroinvertebrate and demersal fish community and contaminant data	Environmental Monitoring and Assessment Program (EMAP)	http://www.epa.gov/emap/nca/html/data/index.html	1990-2006	Downloadable data	
	Counts of various raptor species	Hawk Count	http://hawkcount.org/sitesel.php?country=USA&stateprov=Virginia	varies	Downloadable data	dates vary for different sites, e.g. http://hawkcount.org/siteinfo.php?site=476 is Williamsburg site and data range from 1996-2010
	Inventory and monitoring program networks (long-term monitoring of natural resources) in the National Park Service for topics such as air quality, aquatic macroinvertebrates, birds, forest vegetation, water quality and quantity, weather and climate, plus others	National Park Service	http://science.nature.nps.gov/im/			Click on map to go to one of the 3 regions covering Virginia: Mid Atlantic, Appalachian Highlands, and Northeast Coastal and Barrier. Data are currently unavailable to the public, but will be available gradually in late 2010 and into 2011.
	Human diseases	Virginia Department of Health; Office of Epidemiology; Division of Surveillance and Investigation	http://www.vdh.state.va.us/Epidemiology/Surveillance/SurveillanceData/index.htm	1979-2008	Downloadable data	tables contain numerous diseases and the number of reported cases
	Waterborne diseases	Centers for Disease Control and Prevention	https://www.cdc.gov/healthywater/surveillance/surveillance-reports.html	1971-2006	pdf reports with data graphs	search other departments on CDC website for additional long-term data on human diseases
	Disease maps	US Geological Survey	https://diseasemaps.usgs.gov/mapviewer/	varies by disease	maps and graphs	includes diseases such as West Nile Virus, St. Louis Encephalitis, and Equine Encephalitis with data for disease appearance in birds, humans, and mosquitoes; data are available by year for Virginia in the Historical Data link including tables with number of cases by county and yearly totals
	Shenandoah watershed study and Virginia Trout stream sensitivity study	Shenandoah National Park	http://swas.evsc.virginia.edu/#javascript			25 years of monitoring in Shenandoah National Park
	Monarch butterfly data	research paper	http://www.bioone.org/doi/pdf/10.2317/0504.06.1	1997-2004	pdf peer-reviewed article	data available in Appendix of article
	Land birds--Demographic analyses and Species-landscape models	research paper	http://www.vabci.org/pdf/VAM_MAPS_Report07a.pdf	varies; ~1992 on	pdf report with data graphs	
	Gypsy Moth defoliation	VA Department of Forestry	http://www.dof.virginia.gov/gis/download/index.htm	1984-2009	table	

Please note: If a dataset listed here is no longer accessible, or you know of a dataset which should be included, please email us at: crrm@vims.edu.