

Photo Credits for Course on Understanding Climate Change Impacts on Water Resources

Photos and graphics used for this course were taken from a number of public domain galleries, reference documents, and U.S. EPA. The sources of the photos used in the course are listed below.

Climate Change 101

Trinity Lake, California in February 2014 - U.S. Geological Survey,

<http://ca.water.usgs.gov/data/drought/images/carousel/Trinity-Lake-drought-04Feb2014.jpg>

What is causing climate change?

U.S. Global Change Research Program, Climate Change Impacts in the United States: The Third National Climate Assessment, <http://www.globalchange.gov/browse/multimedia/human-influence-greenhouse-effect>

What is causing this rise in greenhouse gases?

National Climate Assessment; Our Changing Climate -

<http://nca2014.globalchange.gov/highlights/report-findings/our-changing-climate#tab2-images>

What are the indicators of climate change?

National Oceanic and Atmospheric Administration, National Climatic Data Center,

<http://www.globalchange.gov/browse/multimedia/ten-indicators-warming-world>

What are the observed and projected changes in the U.S.?

<http://www.globalchange.gov/browse/reports/climate-change-impacts-united-states-third-national-climate-assessment-0>

The Water Cycle

Our Changing Planet: The Fiscal Year 2003 U.S. Global Change Research Program,

<http://data.globalchange.gov/file/d7b7addb-6458-4587-87b4-d82661811e8b>

Vulnerability of Water Resources to Climate Change

Upper: Flooded cropland in southwest Iowa by Keith McCall, USDA NRCS,

<http://photogallery.nrcs.usda.gov/netpub/server.np?find&catalog=catalog&template=detail.np&field=itemid&op=matches&value=3033&site=PhotoGallery>

Lower: Devil's Golf Course in Death Valley, CA, <http://www.istockphoto.com/photo/devils-golf-course-in-death-valley-np-11945953?st=5f50600>

Local Case Study – Colorado Springs Utilities, CO

Left: Juhan Sonin, www.flickr.com, Creative Commons,

<https://www.flickr.com/photos/juhansonin/463545370/in/photolist-GXMTy-2xPpBs-aBebK5-c4zmSs-4esZNa-3KudVa-58egJW-ob62Jx-5Kwc2y-sF6uA-qKvLV-4pMnbv-7KY69Y-sF625-8brCnH-dgr9ks-69SQMC-36Birs-te8Jz-sWaUZ-tf2kj-sWbfY-9hKSAQ-dq97m6-74gjbB-nCjZoK-bkjWL-nCjZpM-9kN9Qo-nQJpX5-9hKSrG-duZpUH-9hKSCm-9hKSKf-mQqJY-sWbqu-sQLUC-kposY-76GfY5-4gnE7q-38u7JB-nTwpnd-9eFTod-9tvC4f-nStQgt-nSLboL-ojbctR-nq91G-nCiZvc-sm1H>

Middle and Right: Mary, Monterey Bay Aquarium, www.flickr.com, Creative Commons,

<https://www.flickr.com/photos/42614915@N00/456172287/in/photolist-GXMTy-5HujBx-7b5GBM-Gj18r>

Local Case Study – Tuolumne Utilities District, Sonora, CA

Left: Lyons Reservoir, Courtesy of TUD, www.tudwater.com

Middle: Regional Wastewater Treatment Plant in Sonora, Courtesy of TUD, www.tudwater.com

Right: TUD Main Office, Courtesy of TUD, www.tudwater.com

Local Case Study – Kansas City, MO

Kansas City Water Services

www.kcwaterservices.org

Local Case Study – Southfork Nooksack River, WA

Small Fish: Juvenile Chinook by Roger Tabor, U.S. Fish and Wildlife Service

Large Fish: Josh Larios, https://commons.wikimedia.org/wiki/File:Chinook_salmon1.jpg

Local Case Study – South Monmouth, NJ

<http://www.smrta.org/>

https://www.fema.gov/sites/default/files/images/femaphotosrosannaarias-9926_medium_9.jpg

Local Case Study – Wailuku-Kahului Wastewater Reclamation Facility, HI

Kahului Wailuku Wastewater Treatment Plant, Juan Rivera, County of Maui, Wastewater Reclamation Division

<http://mauinow.com/2012/09/20/shoreline-protection-proposed-at-kahului-wastewater-facility>

Watershed Degradation: EPA National Water Program Highlight

Photo by Tetra Tech, Inc., Fairfax County, VA

Local Case Study – Taunton River Watershed, MA

Left: Map of Taunton River Watershed, U.S. Geological Survey,

https://en.wikipedia.org/wiki/File:Taunton_River_Watershed.gif

Right: Railroad bridge over Taunton River near Dean Street, Taunton, Massachusetts, by Marbela,

https://en.wikipedia.org/wiki/List_of_crossings_of_the_Taunton_River#/media/File:Taunton_River_third_RR_bridge.JPG

Local Case Study – San Juan Bay Estuary Program, PR

<http://sanjuanbayestuary.blogspot.com/>

http://water.epa.gov/type/oceb/nep/programs_sjb.cfm

EPA National Water Program Highlight – Marine Ecosystem Valuation, Modeling and Monitoring

<http://www3.epa.gov/climatechange/science/indicators/oceans/acidity.html>

Local Case Study – Casco Bay National Estuary Program, ME

Left: Sea Snail, Nina Bednarsek, National Oceanic and Atmospheric Administration Pacific Marine Environmental Laboratory, <http://nca2014.globalchange.gov/report/regions/oceans#tab2-images>

Middle and Bottom Right: Landscape photo/little boy photo, <http://www.cascobayestuary.org/about-us/>

Upper Right: People moving pH monitor, Brian Rappoli, USEPA

Explore Your Region

All graphics in the Explore Your Region slides are from the National Climate Assessment unless otherwise indicated: <http://nca2014.globalchange.gov/report#section-1948>

Explore Your Region (map)

<http://scenarios.globalchange.gov/regions>

Impacts on Vulnerable Populations

www.iStock.com

Congratulations!

Streambank willow planting in the Johnson Creek Watershed in Portland, OR. Photo by Tetra Tech.

Climate Change Impacts in the U.S. – Temperature

<http://www.globalchange.gov/browse/multimedia/global-temperature-change-decade-averages>

Climate Change Impacts in the U.S. – Precipitation

<http://www.globalchange.gov/browse/multimedia/observed-us-precipitation-change>

Climate Change Impacts in the U.S. – Weather

<http://nca2014.globalchange.gov/sites/report/files/images/web-large/Figure-2.21hi.jpg>

<https://www.ncdc.noaa.gov/billions/>

Climate Change Impacts in the U.S. – Sea Level

<http://www.globalchange.gov/browse/multimedia/past-and-projected-changes-global-sea-level-rise>

Climate Change Impacts in the U.S. – Ocean Environment

Coral reef survey off the coast of Puerto Rico – EPA Flickr,

<https://www.flickr.com/photos/usepagov/7932040500/in/album-72157629017469667/>