



Cabrillo Marine Aquarium

Virginia Reid Moore Marine Research Library

Library Pathfinder: California Drought

The state of California is facing one of the most severe droughts on record. Governor Brown declared a drought State of Emergency in January 2014 and directed state officials to take all necessary actions to prepare for water shortages.

Key facts about the CA drought, written by Dr. Faith Kearns (UC Institute of Water Resources) include:

- 1) California depends on water from the winter snowpack to get through California's dry summers. Images taken from NASA's Airborne Snow Observatory show that the snowpack levels in the Sierra Nevada Mountains decreased from **179,000 acre-feet** (57.6 billion gallons of water) in April 2014 to **74,000 acre-feet** (24 billion gallons of water) in March 2015.
- 2) Global climate change seems to be exacerbating the drought.
- 3) Wildlife and ecosystems have been severely impacted by the drought.
- 4) Pumping groundwater to compensate for the shortage of surface water has detrimental effects on residents whose wells have dried up. Groundwater depletion causes land to sink.

California is dealing with the drought through legislation, spending funds on water projects such as water storage, reducing reliance on water transfers from other regions, managing water more efficiently and raising community awareness.

Books for Adults

Beyond Chinatown / Steven P. Erie, 2006.

Discusses the history of the MWD and Southern CA water politics.

Managing California's Water: From Conflict to Resolution / Jane Hanak and Jay Lund, 2011.

Re-Imagining the California Lawn / Carol Bornstein and David Fross, 2011.

Water to the Angels: William Mulholland, His Monumental Aqueduct and the Rise of Los Angeles / Les Standiford, 2015.

The Great Thirst: Californians and Water, A History / Norris Hundley, Jr., 2001.

The West without Water: What Past Floods, Droughts and Climate Clues Tell us about Tomorrow / Lynn Ingram and Frances Malamud-Roam, 2015.

Newspaper Articles

Los Angeles Times:

May 1, 2015 – “Lawn’s End” / John M. Glionna

April 30, 2015 – “Brown set further cuts on emissions” / Chris Megerian

April 29, 2015 – “Brown Seeks Steeper Water Fines” / Chris Megerian

April 22, 2015 – “Studying how to save water” / Carla Rivera

April 10, 2015 – “Mayor Touts water-saving bid” (Save the Drop) / Matt Stevens

April 8, 2015 – “Up to 35% cut in water use urged” / Matt Stevens, et al.

April 7, 2015 – “MWD plans rationing for urban users” / Bettina Boxall

March 18, 2015 – “Fewer Seats at the Water Table” / Bettina Boxall

March 3, 2015 – “A Water Project Worth it’s Salt?” / Amanda Covarrubias

February 27, 2015 – “Lawsuit tests tired water rates” / Matt Stevens

February 11, 2015 – “A Shocking Discovery” (Benzene found in fracking waste water) / Julie Cart

January 17, 2015 – “Heat hits new high; 2014 was the warmest year ever measured” / G. Mohan

January 3, 2015 – “California was warmest in 2014 . . . dating to 1877 were broken” / V. Rocha & J. Serna

January 17, 2014 – “California declares drought emergency” / B. Boxall & Anthony York

Featured Websites

State of California – Drought

ca.gov/drought

California Dept. of Fish & Wildlife

<https://www.wildlife.ca.gov/drought>

Many drought related actions to preserve and protect the state’s fish and wildlife resources.

California Dept. of Water Resources

water.ca.gov/waterconditions

March 2015: California’s Most Significant Droughts: comparing Historical and Recent Conditions.

California Drought

www.cadrought.com

News, drought tolerant landscaping, maps, data, photos.

Metropolitan Water District of Southern California

www.mwdh2o.com

Save the Drop, L.A.

www.lamayor.gov/savethedropla

Los Angeles Mayor Garcetti’s call to action for water conservation, plus water saving tips and various incentives for buying rain barrels, water efficient washing machines and commodes, and converting from turf (lawns) to perennials, succulents and cacti.



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LIBRARY PATHFINDER

WARMING OCEANS DR. IAN FENTY

Reading materials and Online Resources

Articles

Greenland's ice sheets hold clues to global sea-level rise / K. Pope

<https://www.nationalgeographic.com/environment/2018/10/greenland-ice-sheet-predicts-sea-level-rise-climate-change/>

Modeling of ocean-induced icemelt rates of five west Greenland glaciers over the past two decades / E. Rignot, I. Fenty et al.

Geophysical Research Letters, 43, 6374-82, June 2016.

Oceans Melting Greenland / Ian Fenty et al., Oceanography (29)4: 72-83, Dec. 2016.

Spreading of warm ocean water around Greenland as a possible cause for glacier acceleration / E. Rignot, I. Fenty et al. Annals of Glaciology 53(60) 2012.

Undercutting of marine-terminating glaciers in West Greenland / Eric Rignot, Ian Fenty et al. Geophysical Research Letters, 42, 5909-17, July 2015.

Websites

Dr. Ian Fenty (JPL Science)

<https://science.jpl.nasa.gov/people/Fenty/>

Books

Climate Change (DK Eyewitness) / John Woodward. DK Publishing, **2008**.

Climate of Extremes / Patrick J. Michaels. Cato Institute, **2009**.

Global Warming / Sir John Houghton. Cambridge Univ. Press, **2009**.

How to change minds about our changing climate / Seth B. Darling.
The Experiment, LLC., **2014**.

Just Cool It! / David Suzuki & I. Hanington. Greystone Books, **2017**.

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Cabrillo Marine Aquarium is a facility of the City of Los Angeles, Recreation and Parks Department with support from Friends of CMA.

Virginia Reid Moore
Marine Research Library
@ the Cabrillo Marine Aquarium

LIBRARY PATHFINDER

Arctic Climate, as Documented by Algal Rocks

Reading materials and Online Resources

Websites

Williams Marine Environment Change
<https://sites.google.com/site/branwnew/home>

Diving Deep below Arctic the ice to bring back our ocean's skeletons
/ by Nora Rappaport, National Geographic - Ocean Views, August 25, 2016
<http://voices.nationalgeographic.org/2016/08/25/diving-deep-below-arctic-ice-to-bring-back-our-oceans-skeletons-bestjobever/>

Articles

Multicentennial Record of Labrador Sea Primary Productivity and Sea-Ice Variability Archived in Coralline Algal Ba/Ca. Nature Communications. 2017.
Chan, P., Halfar, J., Hetzinger, S., Adey, W., Zack, T., Moore, G.W.K., Wortmann, U.G., **Williams, B.**, and Hou, A. (2017)

Climate change explained: The 5 most prevalent climate change phenomena explained simply. / by Chloe Schneider
<http://mashable.com/2016/09/26/5-climate-change-explained>

Coralline algal growth-increment widths archive North Atlantic climate variability / J. Halfar , S. Hetzinger , W. Adey , T. Zack , G. Gamboa , B. Kunz , **B. Williams** , D.E. Jacob.

Palaeogeography, Palaeoclimatology, Palaeoecology 302 (2011) 71–80.

Books / Reports

Age, Growth Rates, and Paleoclimate Studies of Deep Sea Corals. / Prouty, N.G., Roark, E.B., Andrews, A., Robinson, L., Hill, T., Sherwood, O., **Williams, B.**, Guilderson, T., Fallon, S. (2015)

In: Hourigan TF, Etnoyer PJ, Cairns SD, Tsao C-F (eds) **The State of Deep-Sea Coral and Sponge Ecosystems of the United States: 2015.** NOAA Technical Memorandum X. NOAA, Silver Spring, p 10-1 – 10-21.

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