

Sustainable Website Design: Construction and Presentation Methods to Address Climate Change

A presentation for Princeton ACM / IEEE-CS Chapters Joint Meeting
November 2024

Presentation Links

Climate Change is Here Now

Extreme Weather & Climate Change

- Extreme Weather and Climate Change
<https://science.nasa.gov/climate-change/extreme-weather/>

Health

- Climate Change Indicators: Heat-Related Deaths
<https://www.epa.gov/climate-indicators/climate-change-indicators-heat-related-deaths>
EPA, May 2024
- Heat-Health Action Plans: Guidance
<https://www.who.int/publications/i/item/9789289071918>
World Health Organization, January 1, 2008
- Climate Change and Respiratory Diseases
<https://publications.ersnet.org/content/errev/23/132/161>
European Respiratory Review, June 2014
- As Animals Migrate Because of Climate Change, Thousands of New Viruses Will Hop From Wildlife to Humans—and Mitigation Won't Stop Them
<https://insideclimatenews.org/news/07062022/monkeypox-zoonotic-diseases-spread-climate-change/>
Inside Climate News, June 7, 2022
- Wildfire Smoke Exposure Under Climate Change: Impact On Respiratory Health Of Affected Communities
<https://pmc.ncbi.nlm.nih.gov/articles/PMC6743728/>
National Library of Medicine, March 1, 2020

Economy

- Extreme Weather Is Driving Food Prices Higher. These 5 Crops Are Facing The Biggest Impacts
<https://www.weforum.org/stories/2024/02/climate-change-food-prices-drought/>
World Economic Forum, February 2024
- The Economic Impact of Climate Change on Northwest Farms
<https://www.climatehubs.usda.gov/hubs/northwest/topic/economic-impact-climate-change-northwest-farms>
USDA Climate Hubs
- A Global Warming And Heat Extremes To Enhance Inflationary Pressures
<https://www.nature.com/articles/s43247-023-01173-x>
Nature Communications Earth and Environment, March 21, 2024
- Adapting Food Supply Chains to Climate Change
<https://www.foodlogistics.com/sustainability/carbon-footprint/article/22871413/john-galt-solutions-inc-adapting-food-supply-chains-to-climate-change>
Food Logistics, September 18, 2023
- Does Climate Change Cause an Upsurge in Food Prices?
<https://pmc.ncbi.nlm.nih.gov/articles/PMC10779241/>
National Library of Medicine, January 2, 2024

Insurance

- Climate Change, Disaster Risk, and Homeowner's Insurance
<https://www.cbo.gov/publication/59918>
Congressional Budget Office, August 27, 2024
- States beg insurers not to drop climate-threatened homes
<https://stateline.org/2024/06/05/states-beg-insurers-not-to-drop-climate-threatened-homes/>
Stateline, June 5, 2024
- Homeowners insurance sector slammed by climate impacts
<https://www.insurancebusinessmag.com/us/news/catastrophe/homeowners-insurance-sector-slammed-by-climate-impacts-489128.aspx>
Insurance Business, May 14, 2024
- Florida's homeowner's insurance crisis: How climate change, extreme weather are driving up costs
<https://www.nbc-2.com/article/florida-homeowners-insurance-crisis-climate-change-weather/61874232>
WBBH-TV NBC 2, August 14, 2024

- Insurers Keep Dropping California Homeowners. Changes Are In The Works To Try To Stop Their Cherry-Picking
<https://www.nbcbayarea.com/investigations/consumer/insurers-keep-dropping-ca-homeowners/3663548/>
KNTV NBC Bay Area, September 27, 2024

The Web, Electricity, and CO2

- The Carbon Footprint of the Internet
<https://www.climateimpact.com/news-insights/insights/infographic-carbon-footprint-internet/>
Climate Impact Partners, April 22, 2021
- The Environmental Sustainability Of Digital Content Consumption
<https://www.nature.com/articles/s41467-024-47621-w>
Nature Communications - May 2, 2024
- Electricity Maps
<https://app.electricitymaps.com>

More:

- Use data from Electricity Maps: <https://www.electricitymaps.com/data-portal>
- Electricity Maps API: <https://www.electricitymaps.com/get-our-data>
- Interview with both the CEO and Tech Lead of Electricity Maps: Environment Variables Podcast
<https://podcasts.castplus.fm/e/183mmp98-electricity-maps>
September 26, 2024
Electricity Maps, Episode 83
- Website Carbon Calculator
<https://www.websitecarbon.com>
<https://www.websitecarbon.com/how-does-it-work/>
- Ecograder
<https://ecograder.com>
<https://ecograder.com/how-it-works>

Sustainable Website Design Strategies

Reduce Data

- Photoshop
<https://www.adobe.com/products/photoshop.html>
- Affinity Photo
<https://affinity.serif.com/en-us/photo/>
- ShortPixel
<http://shortpixel.com>

Lighter Analytics

- Google Analytics
<https://analytics.google.com>
- Cabin Analytics
<https://withcabin.com>

Lighter Plugins

- Yoast SEO
<https://wordpress.org/plugins/wordpress-seo/>
- Slim SEO
<https://wordpress.org/plugins/slim-seo>

PMUG and Sustainable Web Design

- The Princeton Macintosh Users's Group
<https://pmug-nj.org>

Additional Resources

Background Material

Books

- Tom Greenwood - Sustainable Web Design (August 2024, Revised Version)
<https://www.amazon.com/Sustainable-Web-Design-Tom-Greenwood/dp/1068759402/>
- <https://www.kobo.com/us/en/ebook/sustainable-web-design-1>
- Tim Frick - Designing for Sustainability (September 2016)
<https://www.amazon.com/Designing-Sustainability-Building-Products-Services/dp/1491935774/>
- <https://www.kobo.com/us/en/ebook/designing-for-sustainability>
- Sustainable Web Design In 20 Lessons (March 2023)
<https://www.amazon.com/Sustainable-Web-Design-20-Lessons/dp/B0BW3BDL67/>

Organizations

- ClimateAction.tech (Tech sustainability in many forms, including Websites)
<https://climateaction.tech>
- Green Web Foundation
<https://thegreenwebfoundation.org>
- Green Software Foundation
<https://greensoftware.foundation>
- W3C Sustainable Web Design Community Group
(Includes in-progress creation of the Web Sustainability Guidelines Report)
<https://www.w3.org/community/sustyweb>

The Latest

Newsletters and Forums

- Curiously Green Newsletter from Wholegrain Digital
<https://www.wholegraindigital.com/curiously-green/>
- ClimateAction.tech Newsletter
<https://buttondown.email/climateActionTech/>

- ClimateAction.tech Newsletter Archive
<https://buttondown.email/climateActionTech/archive/>
- ClimateAction.tech on Slack (Tech sustainability in many forms, including Websites)
see the channels: #greener-design and #greener-webdev
<https://climate-tech.slack.com>
- WordPress sustainability channel on Slack
<https://make.wordpress.org/project/2022/11/01/sustainability-channel-what-should-we-do/>
- Making WordPress on Slack
<https://wordpress.slack.com>
see the channel: #sustainability

Blogs

- Wholegrain Digital (London) Blog posts on Sustainable Websites
<https://www.wholegraindigital.com/blog/category/sustainable-web/>
- Mightybytes (Chicago) Blog posts on Sustainable Websites
<https://www.mightybytes.com/blog/tag/sustainablewebdesign/>
- Green the Web (Germany) Blog posts
<https://greentheweb.com/blog/>

Podcasts

- Environmental Variables
<https://podcasts.castplus.fm/environment-variables>
- Green IO
<https://podcasts.castplus.fm/greenio>
- Green the Web
<https://greentheweb.com/podcast/>

Web Development

Sustainability Validation

- Website Carbon Calculator
<https://www.websitecarbon.com>
- Ecograder
<https://ecograder.com>
- Are my Third Parties Green?
<https://aremythirdpartiesgreen.com>

Sustainable Websites in General

- Sustainable Web Design
<https://sustainablewebdesign.org>