



# The New Digital Landscape: How the Trump Administration Has Undermined Federal Web Infrastructures for Climate Information

**EDGI**

# THE NEW DIGITAL LANDSCAPE

## How The Trump Administration Has Undermined Federal Web Infrastructures For Climate Information

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The Environmental Data & Governance Initiative (EDGI) is an organization comprised of academics and non-profit employees, as well as caring and committed volunteers who come from a broad spectrum of work and life backgrounds. EDGI promotes open and accessible government data and information along with evidence-based policy making.



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# EXECUTIVE SUMMARY

U.S. federal government websites are a key component of an infrastructure that supports environmental awareness and decision-making. The Trump administration has undermined environmental governance by disinvesting in website maintenance and restricting access to content on issues such as climate change. These website changes actively erode the digital bridge by which publicly-funded research is contextualized and shared with those in need of information, including the general public and decision-makers in state, local, and tribal governments.

The United Nations Intergovernmental Panel on Climate Change (IPCC) [warns](#) that significant and systemic mitigation actions are necessary in order to avert catastrophic changes to global environmental function and habitability.<sup>1</sup> Rather than cultivating the informational resources necessary to support this transformation, the Trump administration has removed climate change from federal agency websites, a clear policy indicator in line with withdrawing from the Paris Agreement and revoking the Clean Power Plan. While prominent political, journalistic, and scientific entities are [sharpening the language they use to describe the climate crisis](#), we see precisely the opposite from this administration: removal of the term “climate change” and its replacement with *less* clear language.<sup>2</sup>

In this report, we [build on our existing research](#) to present a broad analysis of how the Trump administration has altered the use of terms related to climate change on federal environmental websites.<sup>3</sup> Over the thousands of websites we monitor, use of the terms “climate change,” “clean energy,” and “adaptation” dropped by 26% between 2016 and 2018, while catch-all terms that are employed to undermine clear analysis – such as “energy independence,” “resilience,” and “sustainability” – increased by 26%. Over half of all pages where “climate change” was completely removed (73 / 136) were U.S. Environmental Protection Agency (EPA) pages. These removals are magnified by the fact that the EPA homepage was the 1,750th most

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<sup>1</sup> “Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C approved by governments.” IPCC.

<https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/> (last accessed 12 June 2019).

<sup>2</sup> “Why the Guardian is changing the language it uses about the environment.” *The Guardian*.

<https://www.theguardian.com/environment/2019/may/17/why-the-guardian-is-changing-the-language-it-uses-about-the-environment> (last accessed 12 June 2019).

<sup>3</sup> Rinberg, T., M. Anjur-Dietrich, M. Beck, A. Bergman, J. Derry, L. Dillon, G. Gehrke, R. Lave, C. Sellers, N. Shapiro, A. Aizman, D. Allan, M. Britt, R. Cha, J. Chadha, M. Currie, S. Johns, A. Kliensky, S. Knutson, K. Kulik, A. Lemelin, K. Nguyen, E. Nost, K. Ouellette, L. Poirier, S. Rubinow, J. Schell, L. Ultee, J. Upfal, T. Wedrosky, and J. Wylie. (2018, January 10). Changing the Digital Climate: How Climate Change Web Content is Being Censored Under the Trump Administration. Retrieved from <https://envirodatagov.org/publication/changing-digital-climate>; <https://envirodatagov.org/website-monitoring/>.

visited website in the U.S. in early 2019, giving it more reach than even [whitehouse.gov](http://whitehouse.gov).<sup>4</sup>

We classify website changes made by the administration into three types:

- **Undermining climate change as a key component of pressing policy challenges** – such as when the Occupational Safety and Health Administration (OSHA) [removed all references to “climate change”](#) on a page dealing with how workers and employers can manage heat-related health risks on the job.
- **Changing descriptions of science and scientists** – such as when the Environmental Protection Agency (EPA) [recategorized the work](#) of some of its researchers from “Climate Science” to categories like “Ecosystems”.
- **Removing access to and descriptions of resources** – such as the Department of Transportation’s (DOT) Climate Change Clearinghouse, which was [removed from climate.dot.gov](#), later restored elsewhere, and largely removed again.

While our research cannot make definitive conclusions about motivation in all cases, changes to sites may often be the result of *direct* politicization – that is, [orders from senior administration officials and political appointees](#).<sup>5</sup> Indeed, right-wing climate denial groups with [privileged access to the EPA](#) – such as The Heartland Institute – have submitted reports directly to the White House [identifying climate-related webpages for the administration to remove](#).<sup>6</sup> In other cases, there may be *indirect* [self-censorship](#) occurring, in which agency or program staff modify climate change content to “fly under the radar” of politically-appointed higher-ups.<sup>7</sup>

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<sup>4</sup> Source: <https://web.archive.org/web/20190221095620/https://www.alexa.com/siteinfo/epa.gov>. About 7% of traffic to the epa.gov domain is to its archives: the January 19, 2017 Snapshot and [archive.epa.gov](http://archive.epa.gov).

<sup>5</sup> “Newly Released Records Refer to Pruitt’s Personal Involvement in Removal of Climate Information from EPA Website.” Environmental Defense Fund. <https://www.edf.org/media/newly-released-records-refer-pruitts-personal-involvement-removal-climate-information-epa> (last accessed 12 June 2019).

<sup>6</sup> “Emails show collaboration among EPA and climate-change deniers.” PBS. <https://www.pbs.org/newshour/nation/emails-show-collaboration-among-epa-and-climate-change-deniers> (last accessed 12 June 2019); “EXECUTIVE BRANCH SITES CONTINUE TO PROMOTE OBAMA’S CLIMATE POLITICS.” The Heartland Institute. <https://www.heartland.org/news-opinion/news/executive-branch-sites-continue-to-promote-obamas-climate-politics> (last accessed 12 June 2019).

<sup>7</sup> “Don’t call it ‘climate change’: How the government is rebranding in the age of Trump.” *The Washington Post*. <https://www.washingtonpost.com/news/energy-environment/wp/2017/05/26/just-dont-call-it-climate-change-rebranding-government-in-the-age-of-trump/> (last accessed 12 June 2019); Web managers play a key role in determining content: Eschenfelder, K. R. 2004. Behind the Web site: An inside look at the production of Web-based textual government information. *Government Information Quarterly* 21 (3):337–358.

Either way, despite the Trump administration's [anti-science agenda](#), many climate resources *are still available*, if not well-maintained.<sup>8</sup> Our research spotlights some of these, including:

- EPA's [ARC-X](#) adaptation resource center, [Greenhouse Gas Reporting Program](#), and [Climate Research](#) and [Climate Indicators](#) pages.<sup>9</sup>
- NASA, NOAA, and USDA climate hubs ([climate.gov](#), [climate.nasa.gov](#), [climatehubs.oce.usda.gov](#)).<sup>10</sup>
- The 2018 interagency [National Climate Assessment](#).<sup>11</sup>

We conclude with three recommendations to not only mitigate the harm done by the Trump administration, but to build a more *just* federal web infrastructure around climate change information:

- **Restore** – to counter removals of critical information, restore it.
- **Revamp** – transparently update and maintain pages with the latest science.
- **Rethink** – pursue [environmental data justice](#).<sup>12</sup> Several of the removals and page edits we document below unduly affect marginalized populations (e.g. workers, the elderly, and Spanish-language speakers). Even if information isn't censored, it can be challenging to access. Yet, web resources must be legible and relevant to all.

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<sup>8</sup> Dillon, L., R. Lave, B. Mansfield, S. Wylie, N. Shapiro, A. S. Chan, and M. Murphy. 2019. Situating Data in a Trumpian Era: The Environmental Data and Governance Initiative. *Annals of the American Association of Geographers*.

<sup>9</sup> <https://www.epa.gov/arc-x>; <https://www.epa.gov/ghgemissions>; <https://www.epa.gov/climate-research>; <https://www.epa.gov/climate-indicators> (last accessed 14 June 2019).

<sup>10</sup> <http://climate.gov/>; <http://climate.nasa.gov/>; <https://www.climatehubs.oce.usda.gov/> (last accessed 14 June 2019).

<sup>11</sup> <https://nca2018.globalchange.gov/> (last accessed 14 June 2019).

<sup>12</sup> See also: Dillon, L., R. Lave, B. Mansfield, S. Wylie, N. Shapiro, A. S. Chan, and M. Murphy. 2019. Situating Data in a Trumpian Era: The Environmental Data and Governance Initiative. *Annals of the American Association of Geographers*; Dillon, L., D. Walker, N. Shapiro, V. Underhill, M. Martenyi, S. Wylie, R. Lave, M. Murphy, P. Brown, and Environmental Data and Governance Initiative. 2017. Environmental Data Justice and the Trump Administration: Reflections from Environmental Data and Governance Initiative. *Environmental Justice*. Walker, D., E. Nost, A. Lemelin, R. Lave, and L. Dillon. 2018. Practicing environmental data justice: From DataRescue to Data Together. *Geo: Geography and Environment* 5 (2):e00061.

# INTRODUCTION

Significant attention continues to be paid to the [politicization of social media](#) over the past few years, with a focus on Russian interference in electoral democracy.<sup>13</sup> But foreign entities are not the only source of disinformation and distraction. In this report, we show how U.S. government websites facilitate the politicization of key environmental concerns like climate change. Our analysis quantifies and characterizes how the Trump administration has censored climate change science on government agency websites – by removing content and pages, restricting access to them, and letting them go unmaintained.

The United Nations Intergovernmental Panel on Climate Change (IPCC) [warns us](#) that we have 11 years to avoid significant, irreversible changes, but the Trump administration and its allies have proven themselves more concerned with censoring climate change information than pursuing mitigation.<sup>14</sup> Alongside policies such as withdrawing from the Paris Agreement and revoking the Clean Power Plan rule, the administration has spent [significant time and resources](#):

- removing references to climate change;
- replacing references to climate change with less-specific terms such as “climate,” “resilience,” and “sustainability”;
- restricting links to climate change pages.<sup>15</sup>

It has also neglected websites:

- There appear to be few, if any, updates made to some climate change information sites, such as EPA’s [Climate Indicators](#).<sup>16</sup>

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<sup>13</sup> “How the Mueller report indicts social networks.” *The Verge*.  
<https://www.theverge.com/interface/2019/4/19/18496274/mueller-report-facebook-youtube-twitter-russia> (last accessed 12 June 2019).

<sup>14</sup> “Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C approved by governments.” IPCC.  
<https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/> (last accessed 12 June 2019).

<sup>15</sup> “Newly Released Records Refer to Pruitt’s Personal Involvement in Removal of Climate Information from EPA Website.” Environmental Defense Fund.  
<https://www.edf.org/media/newly-released-records-refer-pruitts-personal-involvement-removal-climate-information-epa> (last accessed 12 June 2019).

<sup>16</sup> <https://www.epa.gov/climate-indicators>; See also: “EPA: ‘It’s not a happy place.’” *E&E News*.  
<https://www.eenews.net/stories/1060107165> (last accessed 2 May 2019).

- The administration let crucial data portals used by academic and agency scientists – such as [ncdc.noaa.gov](http://ncdc.noaa.gov), [climate.gov](http://climate.gov) and [data.gov](http://data.gov) – [go unfunded and unavailable through the January 2019 shutdown](#).<sup>17</sup>

Together, these changes represent the digital equivalent of [an “adversarial climate science review”](#) – except that, unlike the much-discussed White House effort to question climate science findings, website changes go unannounced and are often beyond immediate public recognition. They insidiously undermine publicly-funded infrastructure for knowledge dissemination.<sup>18</sup> The U.S. federal agency web presence represents a bridge joining experts, scientists, and policy-makers in government to the public. When individual pages and entire subdirectories are altered, removed, or unmaintained, that information bridge to the public starts to collapse.

Federal agency websites are relatively accessible and seemingly authoritative sources of information.<sup>19</sup> For instance, most people reach [epa.gov](http://epa.gov) through searches for common and recognizable terms such as “bed bugs”, “methane”, and “diesel trucks”, rather than technical language.<sup>20</sup> The EPA is therefore a popular gateway for learning about pressing environmental and public health issues, and it is important to characterize access to and content on this and other federal agency websites. We have [not witnessed the removal of data](#) per se, [though this was our early fear](#).<sup>21</sup> Instead, we have seen:

- **Modifications** to the way issues are presented and the choice of terms used. Climate change data itself is crucial, but so too is how agencies contextualize it. For instance, in August 2017, EPA [changed the name](#) of its State Local Climate program to State Local Energy, and throughout its subdirectory ([epa.gov/statelocalenergy](http://epa.gov/statelocalenergy)) began

<sup>17</sup> <http://ncdc.noaa.gov/>; <http://climate.gov/>; <http://data.gov/>; “Website Actions by Federal Environmental Agencies During the Government Shutdown, Including Broad Restriction of Access on NOAA Websites.” EDGI. <https://envirodatagov.org/aar-12-shutdown-report-190225/> (last accessed 12 June 2019).

<sup>18</sup> “White House recruits researchers for ‘adversarial’ climate science review.” *Science*. <https://www.sciencemag.org/news/2019/02/white-house-recruits-researchers-adversarial-climate-science-review> (last accessed 12 June 2019).

<sup>19</sup> Eschenfelder, K. R., and C. A. Miller. 2007. Examining the role of Web site information in facilitating different citizen–government relationships: A case study of state Chronic Wasting Disease Web sites. *Government Information Quarterly* 24 (1):64–88; Gehrke, G. et al. 2018. Continued Access to Online EPA Resources Relevant to the Clean Power Plan is Important for Public Engagement in Rulemaking. <https://envirodatagov.org/comment-on-the-epas-proposed-rule-to-repeal-the-clean-power-plan/>; Gehrke, G. and R. Lave. 2019. EPA Must Provide more Accessible and Informative Resources for Authentic Public Comment. <https://envirodatagov.org/wotus-rule-public-comment/>.

<sup>20</sup> Source: <https://web.archive.org/web/20190221095620/https://www.alexa.com/siteinfo/epa.gov>. About 7% of traffic to the [epa.gov](http://epa.gov) domain is to its archives: the January 19, 2017 Snapshot and [archive.epa.gov](https://archive.epa.gov).

<sup>21</sup> “What happened to Trump’s war on data?” Politico. <https://www.politico.com/agenda/story/2017/07/25/what-happened-trump-war-data-000481> (last accessed 12 June 2019); “Scientists across the US are scrambling to save government research in ‘Data Rescue’ events.” Business Insider. <https://www.businessinsider.com/data-rescue-government-data-preservation-efforts-2017-2> (last accessed 12 June 2019).



emphasizing renewable energy and efficiency over climate change concerns per se.<sup>22</sup>

- **Removals** of pages from the public domain, including pages directly linking to datasets. The most notable example is the EPA's removal of nearly the entire [epa.gov/climatechange](https://www.epa.gov/climatechange) subdirectory in late April 2017. Some removed pages are officially archived, but others, such as Spanish language pages related to the Clean Power Plan, [are not](#).<sup>23</sup> Even so, archives can be hard to navigate, especially for those who do not know exactly what they are looking for.
- **Restrictions:** Agencies [including DOI](#) and EPA have restricted public access to dozens of pages.<sup>24</sup> It is unclear why these pages have not been fully removed but are also "not available for viewing." The most recent versions of such pages may not even be archived except by nonprofits like the Internet Archive / Wayback Machine. For instance, EPA's Water and Climate Change research page was [archived within EPA's official January 19, 2017 snapshot](#), but more recent versions of the now "restricted" page seem to be only available through the Wayback Machine (e.g. the [October 2017 version](#).)<sup>25</sup>

More broadly, examining federal agency websites illustrates:

- **How policy changes are being implemented**, in ways not otherwise visible to the public. For instance, below, we show how the Trump administration has [deprioritized international cooperation](#) on climate action and other environmental efforts, beyond withdrawing from the Paris Agreement. We also show, perhaps more surprisingly, that the administration has [deprioritized adaptation to climate impacts like drought](#).
- **Trends that have not been fully characterized**, such as [scientists being reassigned and/or recategorized](#) into non-climate divisions of agencies.
- **What is still available** – the Trump administration has not completely censored climate information.

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<sup>22</sup> "Assessment of Removals and Changes in Access to Resources on the EPA's "Climate and Energy Resources for State, Local, and Tribal Government" Website." EDGI. <https://envirodatagov.org/wp-content/uploads/2017/10/AAR-5-EPA-State-Local-Climate-Energy-171018.pdf> (last accessed 12 June 2019).

<sup>23</sup> "Continued Access to Online EPA Resources Relevant to the Clean Power Plan is Important for Public Engagement in Rulemaking." EDGI. [https://envirodatagov.org/wp-content/uploads/2018/04/EDGI\\_CPP\\_Proposed\\_Rule\\_Comments\\_042618.pdf](https://envirodatagov.org/wp-content/uploads/2018/04/EDGI_CPP_Proposed_Rule_Comments_042618.pdf) (last accessed 14 June 2019).

<sup>24</sup> "DOI Further Restricts Access to Climate Change Web Pages." EDGI. <https://envirodatagov.org/aar-11-doi-climate-190228/> (last accessed 12 June 2019). These include e.g. <https://www.doi.gov/climate>, <https://www.epa.gov/water-research/water-and-climate-change-research>.

<sup>25</sup> [https://19january2017snapshot.epa.gov/water-research/water-and-climate-change-research\\_.html](https://19january2017snapshot.epa.gov/water-research/water-and-climate-change-research_.html); <https://web.archive.org/web/20171017065917/https://www.epa.gov/water-research/water-and-climate-change-research> (last accessed 18 October 2018).

It is important to consider what is still available and potentially thriving despite this administration and despite insistence from right-wing anti-science groups like the Heartland Institute who [claim](#) the administration has not gone far enough in purging public knowledge infrastructure:<sup>26</sup>

- We have *not* witnessed the deletion of climate data (though during the most recent partial federal government shutdown, we [documented](#) how some of it became inaccessible).<sup>27</sup> The EPA, for instance, retains valuable climate information in at least four locations: the ARC-X adaptation resource center, the Greenhouse Gas Reporting Program, and its Climate Research and Climate Indicators pages (despite a [lack of maintenance](#)).<sup>28</sup> NASA, NOAA, and USDA are also home to valuable resources contextualizing climate change.
- Moreover, we see resistance – even from within the administration – to its anti-science approach. This takes place on social media and the web more generally. For instance, agency staffers [adopted “rogue” or “alt” social media accounts](#) to dispute higher-ups without fear of retribution.<sup>29</sup> We have also documented several cases where web managers at the EPA have [updated broken links](#). These links pointed to removed content, and managers redirected them to accessible, archived versions of the content.

Every administration advances its own policies, but the Trump administration has:

- Issued no formal climate policy
- De-contextualized the basic science upon which policy discussions should occur
- Promulgated misleading and confusing terminology changes, including shifting the discourse from climate change to resilience and from clean energy to energy independence

We are at a pivotal point: climate change is recognized as past due for systemic, global action. While U.S. federal websites still host substantial informational resources, we have also seen significant censorship. Since 2017, EDGI has

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<sup>26</sup> “EXECUTIVE BRANCH SITES CONTINUE TO PROMOTE OBAMA’S CLIMATE POLITICS.” The Heartland Institute. <https://www.heartland.org/news-opinion/news/executive-branch-sites-continue-to-promote-obamas-climate-politics> (last accessed 12 June 2019).

<sup>27</sup> “Website Actions by Federal Environmental Agencies During the Government Shutdown, Including Broad Restriction of Access on NOAA Websites.” EDGI. <https://envirodatagov.org/aar-12-shutdown-report-190225/> (last accessed 12 June 2019).

<sup>28</sup> “EPA: ‘It’s not a happy place.’” *E&E News*. <https://www.eenews.net/stories/1060107165> (last accessed 2 May 2019).

<sup>29</sup> “ROGUE TWITTER ACCOUNTS FIGHT TO PRESERVE THE VOICE OF GOVERNMENT SCIENCE.” *The Intercept*. <https://theintercept.com/2017/03/11/rogue-twitter-accounts-fight-to-preserve-the-voice-of-government-science/> (last accessed 12 June 2019).

[successfully documented](#) key cases of environment-related website removals and change.<sup>30</sup> But until this report, we have not systematically surveyed the entire federal government webspace. Our approach has relied on week-to-week monitoring of a select number of sites. The point of this report is to document, over two years into the Trump administration and [the removal of epa.gov/climatechange](#), exactly what has changed, to what degree, how, and what is still available.<sup>31</sup> Previously, we described how the Trump administration was “[Changing the Digital Climate](#).”<sup>32</sup> Now we step back and characterize this “New Digital Landscape.”

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<sup>30</sup> “Website Monitoring.” EDGI. <https://envirodatagov.org/website-monitoring/> (last accessed 12 June 2019).

<sup>31</sup> “EPA Discontinues Updates to Climate Change Websites.” EDGI.

<https://envirodatagov.org/epa-discontinues-updates-to-climate-change-websites/> (last accessed 12 June 2019).

<sup>32</sup> Rinberg, T., M. Anjur-Dietrich, M. Beck, A. Bergman, J. Derry, L. Dillon, G. Gehrke, R. Lave, C. Sellers, N. Shapiro, A. Aizman, D. Allan, M. Britt, R. Cha, J. Chadha, M. Currie, S. Johns, A. Klionsky, S. Knutson, K. Kulik, A. Lemelin, K. Nguyen, E. Nost, K. Ouellette, L. Poirier, S. Rubinow, J. Schell, L. Ultee, J. Upfal, T. Wedrosky, and J. Wylie. (2018, January 10). *Changing the Digital Climate: How Climate Change Web Content is Being Censored Under the Trump Administration*. Retrieved from <https://envirodatagov.org/publication/changing-digital-climate>.

# METHODOLOGY

In this report, we develop estimates of how key terms related to climate change and environment have changed between the Obama and Trump administrations (for complete notes on our methodology, see [Appendix A](#)). This analysis builds on the [thorough contextualization EDGI has done](#) over the past two years to document content changes and access reductions.<sup>33</sup> We estimate the use of terms before and after the 2016 federal elections for a list of federal environmental agency websites.<sup>34</sup> This list of sites was created through [Data Rescue events](#) organized following the 2016 election and expanded by subsequent “[crawls](#)” using web monitoring software such as [Versionista](#).<sup>35</sup> Ultimately, we developed a collection of over [40,000 URLs](#) for federal environment-related websites.<sup>36</sup> The list of 50+ key terms we examined was developed within EDGI based on our ongoing website monitoring.

We accessed historical “snapshots” of each URL through the Internet Archive’s [Wayback Machine](#) (IAWM), using an API developed by EDGI.<sup>37</sup> The IAWM stores the HTML for a page as it existed on a specific date. For many highly visible pages, like [epa.gov](#), IAWM has a large record going back nearly two decades. For other pages, the IAWM record is less thorough. Two snapshots for every URL were chosen, each corresponding to a date occurring within the Obama or Trump presidential term (respectively). The snapshot was chosen from timeframes that would give us a representative picture of both the Obama and Trump administrations. The Obama snapshots were taken from a date range of January 1, 2016 – July 1, 2016 (spring 2016) and the Trump snapshots were taken from January 1, 2018 – July 1, 2018 (spring 2018). These date ranges were chosen because we were concerned about issues potentially arising from the transition. For instance, if we were to include snapshots from late 2016, we would be encountering changes that [staff were already making](#) in anticipation of the incoming Trump administration.<sup>38</sup> Likewise, if we included snapshots from the earliest days of the Trump administration, we would miss significant changes like the April 2017 removal of [epa.gov/climatechange](#).

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<sup>33</sup> <https://envirodatagov.org/website-monitoring/> (last accessed 14 June 2019).

<sup>34</sup> In other words, we are undertaking a kind of “content analysis.” See: Cope, M. 2010. Coding qualitative data. In *Qualitative research methods in human geography*. Oxford University Press.

<sup>35</sup> <https://envirodatagov.org/datarescue/>; [https://en.wikipedia.org/wiki/Web\\_crawler](https://en.wikipedia.org/wiki/Web_crawler); <https://versionista.com/> (last accessed 14 June 2019).

<sup>36</sup> Full list of URLs: <https://drive.google.com/open?id=1EINHPTTVoOqCMs6ncMBqfZ9QZCGHIGfd>.

<sup>37</sup> <http://archive.org/>; <https://github.com/edgi-govdata-archiving/web-monitoring-processing> (last accessed 14 June 2019).

<sup>38</sup> “Change of language and content for EPA’s Climate Ready Water Utilities program and web page.” EDGI. <https://envirodatagov.org/wp-content/uploads/2017/07/WM-CCR-9-EPA-Climate-Ready-Water-Utilities-170328.pdf> (last accessed 14 June 2019).

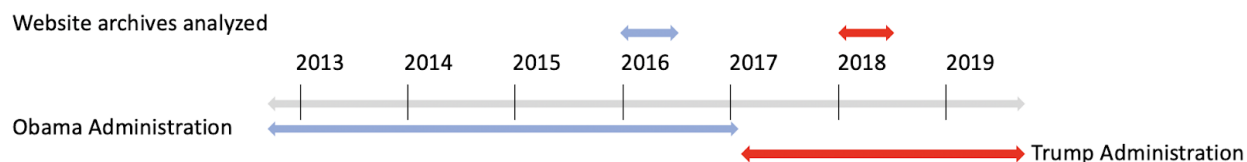


Figure 1. Timeframes captured and compared in our analysis: the first half of 2016 and the first half of 2018.

Terms on each page were counted using custom software (see [Appendix A](#)). Our Python script returns the most recent “viable” IAWM snapshot within each timeframe. Viable means that the page was “live” and actually accessible – not “404 Not Found,” “403 Restricted,” or with an untraceable redirect.<sup>39</sup> Our script then pulls out the unique visible text (text a user can see while visiting a page) for that snapshot. “Visible text” excludes alt tags (text applied to an image as an alternative for search engines and page readers) and other hidden text present in the HTML. We also excluded navigation menus, headers, and footers that are repeated across entire domains. Specifically, we excluded these HTML tags: <nav>, <header>, and <footer>. For example, if “climate change” appeared in a navigation menu used across EPA’s entire website, we did not count it. This would inflate how many page-specific uses of a term there were. We are interested in how agencies substantively use(d) language in parts of sites that people are most likely to see, like the main body of text. However, for a few domains or sets of pages this kind of control was not possible. U.S. federal agencies structure their sites differently; a handful do not use standard tags like <nav>, <header>, and <footer>. We were able to account for this nonstandard templating in most cases, but not all.

Our script counts the number of times each term (e.g. “climate”) was used in the first viable snapshot for each timeframe. We count precisely – that is, we only count “climate” if the word used is “climate.” We do not, for instance, count “climates.” We assess “climate change” separately from “climate.”

<sup>39</sup> An untraceable redirect would mean that the page redirected to another URL, but the IAWM was not able to capture this other URL.

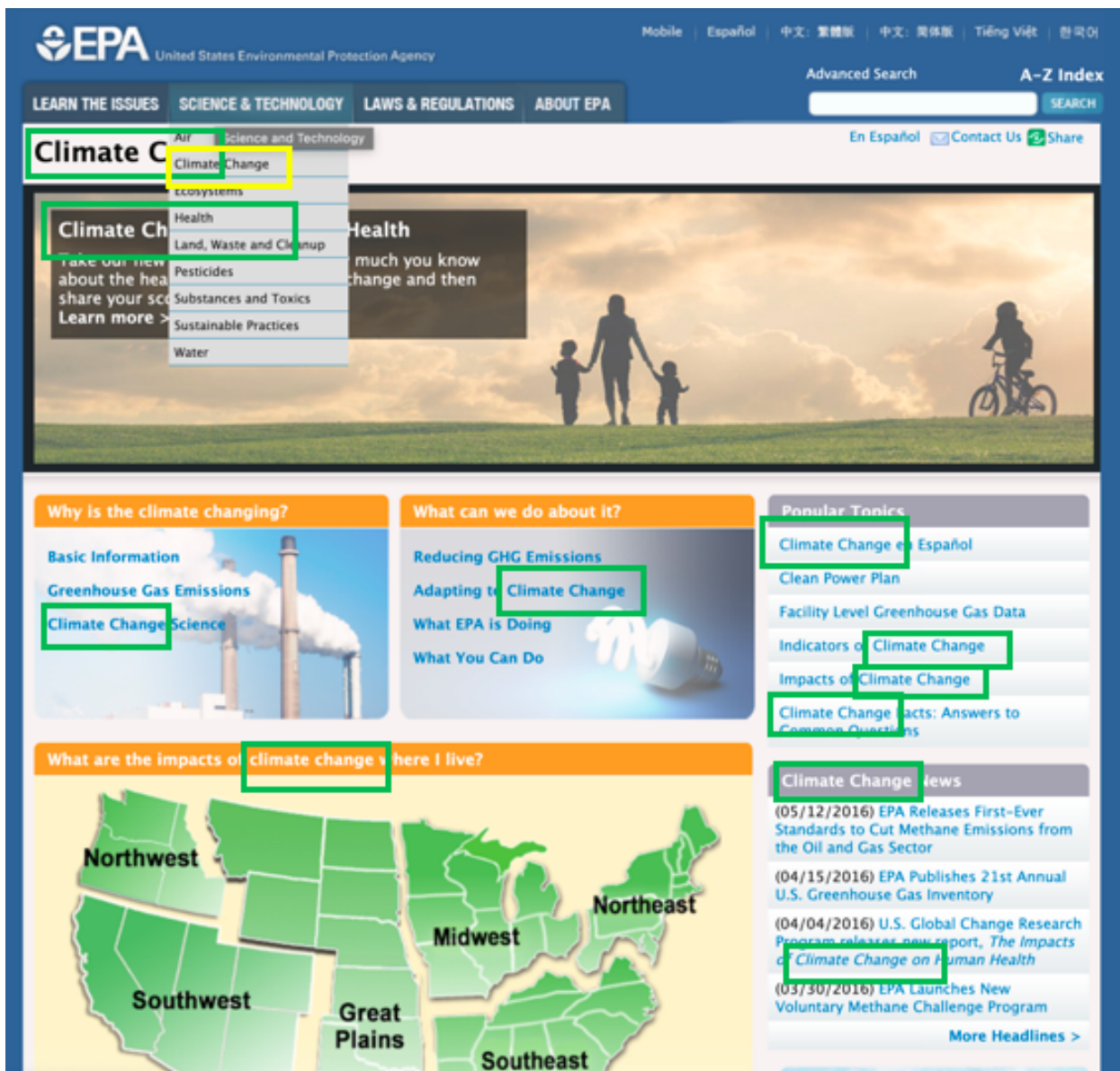


Figure 2. [epa.gov/climatechange](http://epa.gov/climatechange) on June 14, 2016.<sup>40</sup> For the term “climate change,” we count the green-highlighted uses, but not in the yellow-highlighted area (a navigation menu).

<sup>40</sup> [https://web.archive.org/web/20160614172708\\_/https://www3.epa.gov/climatechange/](https://web.archive.org/web/20160614172708_/https://www3.epa.gov/climatechange/) (last accessed 18 October 2018).



## This page is being updated.

Thank you for your interest in this topic. We are currently updating our website to reflect EPA's priorities under the leadership of President Trump and Administrator Pruitt. If you're looking for an archived version of this page, you can find it on the [January 19 snapshot](#).

[Here's what our Public Affairs Office released about these changes.](#)

### Other ways to help you find what you are looking for:

- [Use our advanced search page](#)
- [See our list of website topics](#)
- [Browse our A-Z index of terms and topics](#)
- [Search frequently asked questions or submit a question](#)
- [Search EPA Web Archive](#)
- [Browse EPA's snapshot website as of January 19, 2017](#)
- [Report a website issue](#)
- Go to our [home page](#)

You can also search our site.

What are you looking for?

Figure 3. [epa.gov/climatechange on May 31, 2018](https://www.epa.gov/climatechange).<sup>41</sup> For the term “climate change,” we count any green-highlighted uses (none in this snapshot), but not the yellow-highlighted areas (navigation menus).

Finally, we processed the counts (see [Appendix A](#) for further details and links to the data). We removed unrelated and duplicate URLs, long URLs (so that we could focus on top-level, important pages), and URLs that did not have viable snapshots in both timeframes. Out of the 40,000 URLs we started with, we ended up with a sample of 5,301 by which we assess the differences between the Obama and Trump administrations. This sample is “opportunistic” – we are able to look only at sites with readable Wayback Machine archives in both 2016 and 2018 – as well as “purposive” – we focus on the most prominent pages.

It is important to note the limitations of our analysis. We detect changes in the use of terms on a page, but not every addition or removal of a term is meaningful. For instance, we record a decrease in the use of “climate change” on NASA pages (see below). Further inspection of this particular result reveals that it may or may not be truly significant. Several of the decreases in “climate change” we caught are from a part of the page that is repeated across the NASA site: a “Resources” carousel of

<sup>41</sup> <https://web.archive.org/web/20180531215916/https://www.epa.gov/climatechange/> (last accessed 18 October 2018).

links to videos and other pages (compare, for instance, [this page](#) – 2016, 2018).<sup>42</sup> In this repeated element, a few links to items with "climate change" in their description were removed between spring 2016 and spring 2018. Because this element is repeated across many pages, it adds up to many uses of "climate change" removed. This result should be interpreted cautiously; we do not know how often the carousel is updated. The decrease in "climate change" could just be an artifact of the dates at which we "sampled" these sites. On the other hand, the decrease could indicate something real occurring where NASA is currently more hesitant to feature its climate change resources. While we were able to systematically remove page headers and footers from our analysis, for technical reasons we were not able to remove menus *within* the main body of pages. This might result in an overcount of certain terms, potentially including "sustainability" (DOE) and "hydraulic fracturing" (EPA).

In short, our work is:

**Rigorous** – Our procedures and our tools are carefully documented and open access, so our analysis is reproducible (see [Appendix A](#) for details and links to data). Anyone can access the Wayback Machine snapshots we recorded and recount terms. As a team, we validated our term counts on a set of pages to ensure that the script was working as expected.

**Contextual** – We do not just report our estimates. Doing so could give a misleading sense of precision and ignore the context in which terms changed. Instead, we describe our findings in terms of general trends and give them meaning by discussing examples, demonstrating three common ways terms changed on pages. For instance, instead of simply reporting that 1,640 uses of "climate change" were removed, we show where they were removed, describe this as a trend (a decrease of about 25% *in our sample*) and provide actual examples of changes. It is not meaningful to conclude that 1,640 uses of "climate change" were censored across all U.S. federal agency web domains. Instead, we can infer that *at least* 1,600 uses were removed. We do not conduct statistical analysis in this report. We use trends and averages to describe merely our sample, rather than extrapolating from this sample to make claims about agency websites as a whole.

**Conservative** – Although we note potential overcounts, we believe this is offset by our conservative approach. Through [our weekly monitoring work](#) we have found that more changes – in particular, removals – have occurred since July 2018, the

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<sup>42</sup> [https://climate.nasa.gov/climate\\_resources/136/](https://climate.nasa.gov/climate_resources/136/);  
[http://web.archive.org/web/20160625064516/http://climate.nasa.gov/climate\\_resources/136/](http://web.archive.org/web/20160625064516/http://climate.nasa.gov/climate_resources/136/);  
[http://web.archive.org/web/20180406032424/https://climate.nasa.gov/climate\\_resources/136/](http://web.archive.org/web/20180406032424/https://climate.nasa.gov/climate_resources/136/) (last accessed 18 October 2018).



endpoint of the term counts reported here.<sup>43</sup> In addition, our analysis *does not* include changes to the EPA’s State Local Climate program. That domain was taken offline in April 2017 but [relaunched in August of that year as State Local Energy](#).<sup>44</sup> Since these new pages have new URLs, we were unable to include them in our assessment. If they had been included, they would indicate an even greater removal of climate change language. Finally, we only count uses of a term in the main body of text. For example, agencies like EPA and DOI used “climate change” in the navigational menus that appear on every page across their sites. Many of these links have [since been removed](#), but we do not count those removals in this report.<sup>45</sup>

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<sup>43</sup> <https://envirodatagov.org/website-monitoring/> (last accessed 14 June 2019).

<sup>44</sup> “Assessment of Removals and Changes in Access to Resources on the EPA’s ‘Climate and Energy Resources for State, Local, and Tribal Government’ Website.” EDGI. <https://envirodatagov.org/wp-content/uploads/2017/10/AAR-5-EPA-State-Local-Climate-Energy-171018.pdf> (last accessed 14 June 2019).

<sup>45</sup> “DOI Further Restricts Access to Climate Change Web Pages.” EDGI. <https://envirodatagov.org/aar-11-doi-climate-190228/> (last accessed 14 June 2019).

# RESULTS

## Climate Change

Across the 5,301 pages we tracked, the use of “climate change” decreased from 6,552 mentions in 2016 to 4,912 in 2018, a drop of 1,640 or 25%. In other words, one quarter of the Obama administration’s direct discussion of climate change on the pages we examined was removed.

The term “climate change” was used on 1,272 different pages, or 24% of the pages we surveyed. Specifically, we found “climate change” on 1,189 Obama-era pages and 1,136 Trump pages. In other words, 4.5% fewer pages mentioned “climate change” at all in 2018.<sup>46</sup> “Climate change” was not necessarily added to or removed from each of the pages it was originally present on. The term *decreased* on 378 pages, *increased* on 203, and *remained the same* on 691. It was eliminated from 136 pages. That is, 36% of the time “climate change” saw decreased usage on a page, it was completely removed (136 / 378).

To summarize: while we document a substantial 25% decrease in the overall use of the term “climate change,” there was not as much of a drop (4.5%) in the number of pages it appeared on. This is because “climate change” was not always eliminated from a page – its use simply decreased. And complete removals of “climate change” were somewhat offset by small additions to other pages it previously wasn’t on.

We can be more precise about what kinds of pages witnessed changes to the use of “climate change.” We break these results down by agency (see Table 1 and the “Insertions and Deletions...” infographic) and then explore individual examples. For instance, half of the pages in our sample where “climate change” was completely removed (73 / 136) were EPA pages. 43 of these 73, in turn, were from the [epa.gov/climatechange](https://epa.gov/climatechange) domain that was withdrawn in April 2017 (see our [report](#)).<sup>47</sup>

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<sup>46</sup> This is almost entirely due to the removal of the [epa.gov/climatechange](https://epa.gov/climatechange) subdirectory. See: <https://envirodatagov.org/the-overhaul-of-epa-gov-has-already-begun/> (last accessed 14 June 2019).

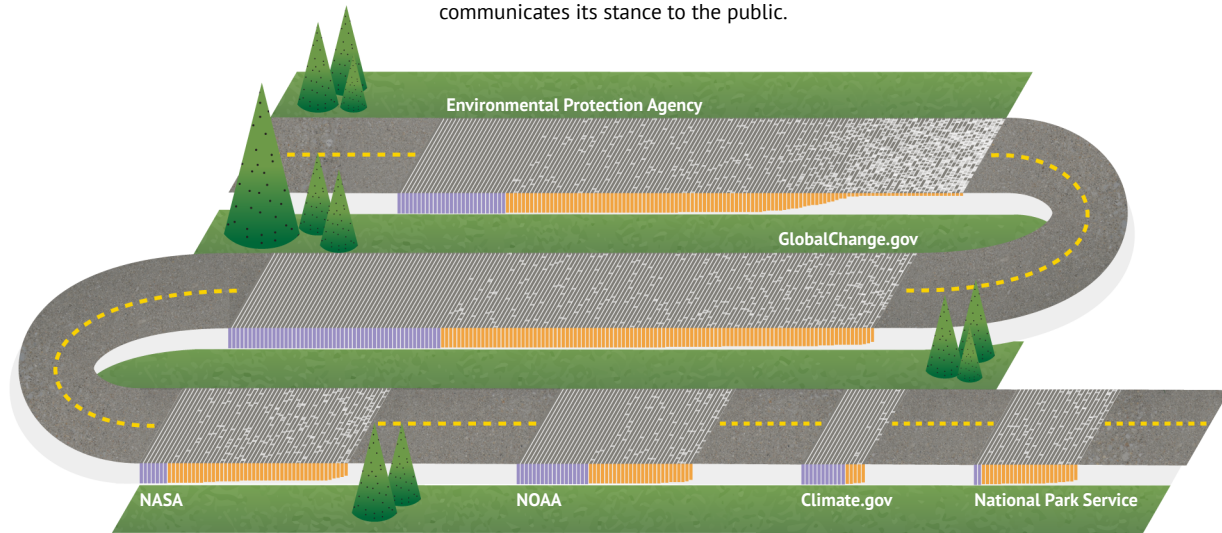
<sup>47</sup> “EPA Discontinues Updates to Climate Change Websites.” EDGI. <https://envirodatagov.org/aar-9-epa-discontinues-updates-to-climate-change-websites/> (last accessed 14 June 2019).

Agency	Spring 2016 count of "climate change"	Spring 2018 count of "climate change"	Change in count	% change	# of 2016 pages mentioning "climate change"	# of 2018 pages mentioning "climate change"	% change in pages mentioning "climate change"
EPA	2118	814	-1304	-61.57	279	216	-22.58
NASA	427	274	-153	-35.83	89	87	-2.25
GlobalChange.gov	1828	1690	-138	-7.55	342	340	-0.58
NPS	290	235	-55	-18.97	28	27	-3.57
Data.gov	630	595	-35	-5.56	60	59	-1.67
DOI	36	9	-27	-75.00	11	8	-27.27
DOE	118	94	-24	-20.34	69	58	-15.94
NOAA	265	245	-20	-7.55	150	139	-7.33
CDC	41	25	-16	-39.02	5	4	-20.00
USDA	133	123	-10	-7.52	15	16	6.67
USGS	8	0	-8	-100.00	2	0	-100.00
Forest Service	89	82	-7	-7.87	27	26	-3.70
FWS	7	2	-5	-71.43	6	2	-66.67
OSHA	4	0	-4	-100.00	1	0	-100.00
DOT	2	0	-2	-100.00	2	0	-100.00
FEMA	48	47	-1	-2.08	34	34	0.00
BOEM	2	2	0	0.00	2	2	0.00
DOJ	5	5	0	0.00	3	3	0.00
EIA	1	1	0	0.00	1	1	0.00
HHS	20	20	0	0.00	2	2	0.00
NIH	63	83	20	31.75	22	25	13.64
Climate.gov	278	304	26	9.35	22	21	-4.55
Federal Register	4	55	51	1275.00	2	50	2400.00

Table 1. Counts of "climate change" by selected federal environmental agency (those with greater than 15 pages in our sample). The Obama snapshots were taken from a date range of January 1, 2016 – July 1, 2016 (spring 2016) and the Trump snapshots were taken from January 1, 2018 – July 1, 2018 (spring 2018). See [Appendix B](#) for acronyms.

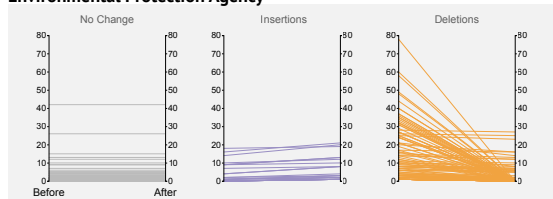
# Insertions and deletions of “climate change” on federal websites

This graphic visualizes insertions and deletions of the term “climate change” on federal websites as a decaying infrastructure of roads that connect the administration to the general public. For each agency, insertions on a single page of the agency website are colored purple and deletions are colored orange, the relative decay of which corresponds to the extent to which the term was deleted. More decayed roads represent higher counts of deletions of “climate change,” ultimately changing the infrastructure through which the administration communicates its stance to the public.

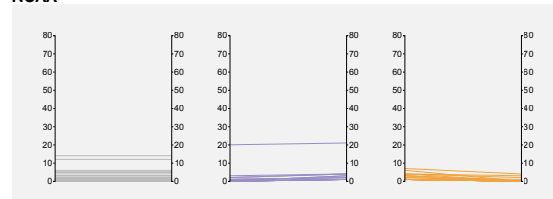


The following plots illustrate the magnitude of insertions, deletions, and non-changes of the term “climate change” for pages on the indicated federal website. In each plot, a single line indicates before (left axis) and after (right axis) absolute counts of “climate change” on a single page on the website; positively sloped lines indicate insertions of the term, negatively sloped lines indicate deletions, and horizontal lines indicate no changes.

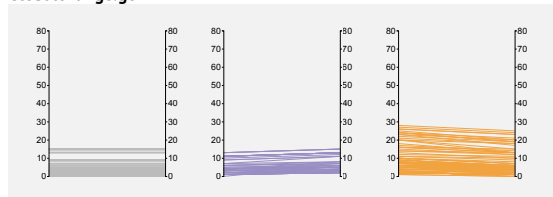
**Environmental Protection Agency**



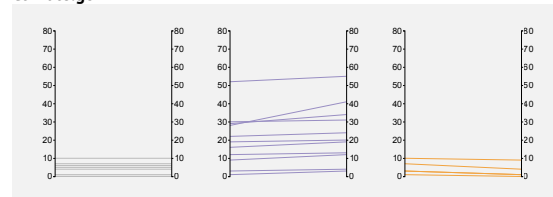
**NOAA**



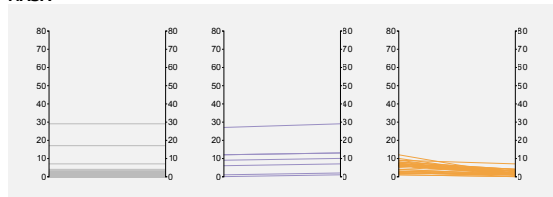
**Globalchange.gov**



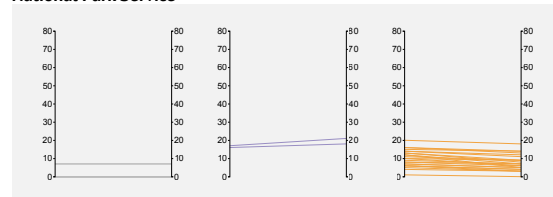
**Climate.gov**



**NASA**



**National Park Service**



The single largest increase in the use of “climate change” occurred on [a GAO page](#) (an increase of 18 mentions).<sup>48</sup> Abstracts and summaries were added for key reports on climate adaptation. However, new reports themselves were not added to the list on the page – in fact, no new reports have been added to this list since summer 2016. Because of the parameters of our snapshot selections (January to July 2016; January to July 2018), it is possible that some of the increases we are ascribing to the Trump administration actually occurred in fall 2016.

Losses of entire pages and dozens of uses of “climate change” are some of the most spectacular modifications EDGI has witnessed. This is clear from the infographic above. The “bridge” between EPA research in particular and the public has been substantially eroded, forming clear gaps. But where has the decrease been more subtle and pervasive? Where has there been a removal of a mention here and there across pages? As the visualization above also shows, we see cracks appearing in the foundations of other agencies’ “bridges.” We categorize such cracks into three types of website changes and illustrate examples of each, noting that individual pages may exemplify more than one kind of change:

- *Undermining climate change as a key component of pressing policy challenges*
- *Changing descriptions of science and scientists*
- *Removing access to and description of resources*

## **Undermining climate change as a key component of pressing policy challenges**

Climate change is a multi-dimensional problem affecting international relations, urban infrastructure, public health, water usage, and many other spheres of public and governmental concern. If federal agencies are to be trusted, objective, authoritative sources of information for the public, climate change must be prioritized as a key contributing factor to these issues. However, by removing discussion of it from the public domain, the Trump administration has taken steps to undermine the sense that climate change is, factually, a pressing issue, much less one to be addressed by policy.

For instance, the Environmental Protection Agency (EPA) altered the “Heat Island Effect” section of its website to downplay discussion of climate change as a priority factor in urban temperature regimes. Climate change is expected to exacerbate

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<sup>48</sup> [http://www.gao.gov/key\\_issues/climate\\_change\\_response/issue\\_summary](http://www.gao.gov/key_issues/climate_change_response/issue_summary) (last accessed 14 June 2019).

heat waves in cities, leading to increased mortality risks for vulnerable populations such as the elderly and the poor (for a review, see [here](#)).<sup>49</sup> EPA's "Heat Island Effect" home page previously contained a scrolling banner with information on four topics. Three of the topics are still available on the [June 29, 2018](#) version of the page.<sup>50</sup> However, a fourth topic, "Climate Change and Heat Islands," was removed from the banner. The banner mentioned the term "climate" three times, including the text "Learn about how climate change and heat islands interact to exacerbate impacts," and linked to a separate "Climate Change and Heat Islands" page ([2016 version](#)).<sup>51</sup> While the "Climate Change and Heat Islands" page is [still live](#), access from the "Heat Islands" home page and navigation sidebar was restricted.<sup>52</sup> A user without previous knowledge of this page will have difficulty finding the page, limiting that user's awareness that climate change and urban heat islands are linked, and how. This kind of minimized discussion (on the "Heat Island Effect" home page) and reduced access (to "Climate Change and Heat Islands") exemplifies how the Trump administration has undermined the sense that climate change is a key, exacerbating factor in existing environmental and justice challenges.

The connection between climate change and heat was further diminished as the Occupational Safety and Health Administration (OSHA) removed all references to climate change on a page that deals with how workers and employers can manage heat-related health risks. In the [2016 version](#) of the page, which discusses the signs and impacts of heat illness, OSHA noted what actions and Executive Orders (i.e. 13653) the federal government was implementing to prepare the U.S. to be resilient to climate change impacts, including extreme temperatures and droughts.<sup>53</sup> In the [2018 version](#) of the page, this section and basic information about heat illness were entirely removed, perhaps because of [a new Executive Order](#) rescinding previous ones.<sup>54</sup> Beyond the policy shift, the content removal undermines understanding of climate change's connections with public health. By removing discussion of how to address climate change's impacts on worker health, the Trump administration is signaling (intentionally or not) that it does not consider worker health worth planning for. Research clearly shows that workers are in fact on the "front lines" of changing climates.<sup>55</sup> Furthermore, for many visitors to the altered site, it would be

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<sup>49</sup> Li, D. and E. Bou-Zeid. 2013. Synergistic Interactions between Urban Heat Islands and Heat Waves: The Impact in Cities Is Larger than the Sum of Its Parts. *J. Appl. Meteor. Climatol.*, 52, 2051–2064, <https://doi.org/10.1175/JAMC-D-13-02.1>.

<sup>50</sup> <http://web.archive.org/web/20180629093913/https://www.epa.gov/heat-islands> (last accessed 18 October 2018).

<sup>51</sup> [http://web.archive.org/web/20160628161333id\\_/https://www.epa.gov/heat-islands](http://web.archive.org/web/20160628161333id_/https://www.epa.gov/heat-islands) (last accessed 18 October 2018).

<sup>52</sup> <https://www.epa.gov/heat-islands/climate-change-and-heat-islands> (last accessed 14 June 2019).

<sup>53</sup> <http://web.archive.org/web/20160218035219/https://www.osha.gov/SLTC/heatillness/index.html> (last accessed 18 October 2018).

<sup>54</sup> <http://web.archive.org/web/20180401071130/https://www.osha.gov/heat/>; <https://www.whitehouse.gov/presidential-actions/presidential-executive-order-promoting-energy-independenc-e-economic-growth/> (last accessed 14 June 2019).

<sup>55</sup> Kiefer, M., Rodríguez-Guzmán, J., Watson, J., van Wendel de Joode, B., Mergler, D., & da Silva, A. S. 2016. Worker health and safety and climate change in the Americas: issues and research needs. *Revista panamericana*

unclear that climate change was something to consider when it comes to occupational health.

NIOSH also diminished connections between climate change and occupational health by replacing “Climate Change” with “Climate” in its sitemap ([2016 version](#)).<sup>56</sup> The link for “Climate” leads to the same page as the link for “Climate Change” did, but that page itself has been altered ([2018 version](#)).<sup>57</sup> As detailed in EDGI’s [July 2018 report](#), the page title was changed from “CLIMATE CHANGE AND OCCUPATIONAL SAFETY AND HEALTH” to “Occupational Safety and Health and Climate.”<sup>58</sup> Alterations were also made to climate change related subpages, including “Climate Change: A Risk for Workers” (now “Impact of Climate on Workers”). These pages were altered to deemphasize definitions and applications of the term “climate change.” The lack of specificity in characterizing and referring to climate change – much less *climate crisis*, as some government, scientific, and journalistic entities are now regularly describing it<sup>59</sup> – undermines the sense that it is significant, connected with public health, and something we can act on.

The EPA altered its “International Cooperation” site to dramatically reduce and generalize its use of the term “climate change,” undermining the sense that climate change should be a priority issue in the U.S.’s foreign affairs. In our [April 2018 report](#), we documented how EPA had removed the “[International Priorities](#)” page in [December 2017](#).<sup>60</sup> The 2017 page included two introductory paragraphs that discussed “shared environmental and governance challenges” in EPA’s bilateral and multilateral partnerships, including challenges such as global climate change. The page also had six navigable tabs that listed information on priorities, such as “Climate Change,” “Air Quality,” and “Strong Institutions.” The “Strong Institutions” tab on the “International Priorities” page discussed EPA’s work with other countries and linked to eleven country-specific pages. One, “EPA Collaboration with China,”

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*de salud publica = Pan American journal of public health*, 40(3), 192–197.; Roelofs, C., & Wegman, D. (2014). Workers: the climate canaries. *American journal of public health*, 104(10), 1799–1801. doi:10.2105/AJPH.2014.302145.

<sup>56</sup> <http://web.archive.org/web/20160522062126/http://www.cdc.gov/niosh/az/c.html> (last accessed 18 October 2018). A sitemap is a kind of directory for a website, providing a list of links to each page in the domain.

<sup>57</sup> <http://web.archive.org/web/20180627200738/https://www.cdc.gov/niosh/az/c.html> (last accessed 18 October 2018).

<sup>58</sup> “Removal of Climate Change Mentions, Links, and Information from the CDC’s National Institute for Occupational Safety and Health Website.” EDGI.

<https://envirodatagov.org/wp-content/uploads/2018/05/CCR-22-CDC-NIOSH-Climate-Change-180506.pdf> (last accessed 14 June 2019).

<sup>59</sup> “Why the Guardian is changing the language it uses about the environment.” *The Guardian*.

<https://www.theguardian.com/environment/2019/may/17/why-the-guardian-is-changing-the-language-it-uses-about-the-environment> (last accessed 12 June 2019).

<sup>60</sup> “Removal of EPA’s ‘International Priorities’ and ‘International Grants and Cooperative Agreements’ pages, as well as corresponding links, from the International Cooperation Website.” EDGI.

<https://envirodatagov.org/wp-content/uploads/2018/04/AAR-7-EPA-International-Cooperation-180423.pdf> (last accessed 14 June 2019);

<http://web.archive.org/web/20171213154233/https://www.epa.gov/international-cooperation/international-priorities> (last accessed 18 October 2018);

<http://web.archive.org/web/20171214161228/https://www.epa.gov/international-cooperation/international-priorities> (last accessed 18 October 2018).

was itself redesigned in June 2018. The [June 14, 2018](#) version of that page had six mentions of the term “climate change.”<sup>61</sup> The following day, [June 15, 2018](#), “climate change” was removed from the page.<sup>62</sup> As we show below, these changes to “EPA Collaboration with China” (and other country-specific pages) were not simply reflecting shifting policy priorities between 2016 and 2018, but undermining public understanding of global climate change. They did so by – for example – substituting discussion of “methane” emissions – potent greenhouse gases – for, more generally, “air quality.”



Figure 4. EPA removed access to the “[International Priorities](#)” page in [December 2017](#). The page had included two introductory paragraphs that discussed “shared environmental and governance challenges” in EPA’s bilateral and multilateral partnerships, including challenges like global climate change. The page also had six navigable tabs that listed information on priorities, such as “Climate Change.”

Other agencies have altered their websites to more completely remove links to key climate change content. The United States Geological Survey (USGS), within the Department of the Interior (DOI), altered the “Science Explorer” section of its website to remove the topic of climate change (see also [our March 2019 report](#)).<sup>63</sup> In 2016, its “[Overview](#)” page listed links to a “Climate Change” page in a sidebar and in the main body. One of these links was accompanied with descriptive text: “This science includes the long-term alteration in the characteristic weather conditions of a region, such as changes in precipitation and temperature.”<sup>64</sup> Additionally, the page featured a scrolling banner linking to the “Climate Change” page. On the [2018 version](#) of the Science Explorer “Overview” page, however, climate change has been

<sup>61</sup><https://web.archive.org/web/20180614000003/https://www.epa.gov/international-cooperation/epa-collaborati-on-china> (last accessed 18 October 2018).

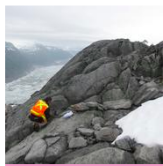
<sup>62</sup><https://web.archive.org/web/20180615003224/https://www.epa.gov/international-cooperation/epa-collaborati-on-china> (last accessed 18 October 2018).

<sup>63</sup> “DOI Further Restricts Access to Climate Change Web Pages.” EDGI. <https://envirodatagov.org/aar-11-doi-climate-190228/> (last accessed 14 June 2019).

<sup>64</sup> <http://web.archive.org/web/20160508123942/https://www.usgs.gov/science/science-explorer> (last accessed 18 October 2018).



removed as a topic.<sup>65</sup> The “[Climate Change](#)” page itself has had all content removed and is now blank.<sup>66</sup> The [previous version](#) served as a directory to other climate change-related topics, such as the greenhouse effect, sea-level change, and carbon sequestration.<sup>67</sup> The term “climate” is still in use within two Science Explorer topics: “Coasts” and “Geology.” However, by removing climate change as a standalone, top-level topic in its Science Explorer, USGS is undermining the sense that climate change is a research priority for this agency and the federal government more broadly.



### Climate Change

This science includes the long-term alteration in the characteristic weather conditions of a region, such as changes in precipitation and temperature.



### Data, Tools, and Technology

These resources include aerial photography, data management, elevation data, geospatial datasets, satellite imagery, risk assessments, and more.



### Coasts

Science and information to better understand coastal-change processes in order to restore and protect coastal resources as well as manage the natural hazards and impacts of climate and land-use change on coastal communities and ecosystems. We provide relevant tools and information needed to make our Nation's coasts healthy and resilient.



### Data, Tools, and Technology

These resources include aerial photography, data management, elevation data, geospatial datasets, satellite imagery, risk assessments, and more.

(a)

**Science Explorer**

**Climate Change**

The topical directory below provides an alternate way to browse USGS science resources and activities. Explore within each topic by date, news, images, video...

**USGS**  
science for a changing world

**Science Explorer**

Choose a topic below to start your exploration

**USGS**  
science for a changing world

- DOI Privacy Policy
- Lena
- Accessibility
- Site Map
- Contact USGS

(b)

<sup>65</sup> <http://web.archive.org/web/20180618023142/https://www.usgs.gov/science/science-explorer> (last accessed 18 October 2018).

<sup>66</sup> <http://web.archive.org/web/20190307201723/https://www.usgs.gov/science/science-explorer/Climate+Change> (last accessed 18 October 2018).

<sup>67</sup> <http://web.archive.org/web/20161211235744/https://www.usgs.gov/science/science-explorer/Climate+Change> (last accessed 18 October 2018).

Figures 5(a) and 5(b). The United States Geological Survey (USGS), within the Department of the Interior (DOI), altered the “Science Explorer” section of its website to remove the topic of climate change. (a) – the main Science Explorer landing page. (b) – the “Climate Change” section of the Science Explorer.

USGS is an office within the DOI and they have separate websites. Between [spring 2016](#) and [spring 2018](#), DOI removed many references and descriptions of climate change from [doi.gov](#).<sup>68</sup> Prior to 2017, the DOI Climate Change webpage had been a central landing page for information about climate change, how it is affecting the nation’s natural resources, and the strategies DOI uses to address challenges presented by climate change. However, in spring 2017, the DOI stripped almost all of the content from that page, replacing it with a simple paragraph acknowledging that the impacts of climate change affect how DOI needs to manage federal lands (see our April 2017 [report](#)).<sup>69</sup> Although beyond the timeframe covered here by our quantitative term analysis, DOI later restricted its climate page from public access and removed “Climate Change” from its list of priorities (see our March 2019 [report](#)).<sup>70</sup> This removal is especially egregious as DOI manages approximately one-fifth of the U.S. land area, including millions of acres it leases for oil and gas extraction which contributes to climate change. In 2018, DOI opened more land for lease than ever before and [boasted](#) that it had the highest number of oil and gas leases in history, reaping \$1.1 billion in revenue.<sup>71</sup> With its website removals, DOI limits informed evaluation of its contributions to climate change and how a changing climate imperils DOI managed land. The removal of “climate change” as an agency priority and topic worth discussing undermines public understanding of the consequences of both oil and gas extraction *and* climate change.

The Department of Interior also removed mentions of climate change from its [WaterSMART program](#) page ([2018 version](#)).<sup>72</sup> The program’s focus is on water conservation and water use planning. The department removed sections describing how the program “identifies adaptive measures to address climate change and its impact on future water demands” and “coordinates with the Department’s Task Force on Energy and the [sic] Climate Change and Climate Change Response Council.” The page also previously contained links to a press release, WaterSMART Launch Video, and the department order establishing WaterSMART – all of which

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<sup>68</sup> <http://web.archive.org/web/20160529184407/https://www.doi.gov/climate/>;  
<http://web.archive.org/web/20180620205458/https://www.doi.gov/climate> (last accessed 18 October 2018).

<sup>69</sup> “Confirmation of Changes to Department of the Interior’s Climate Change Page.” EDGI.  
<https://envirodatagov.org/wp-content/uploads/2017/07/WM-CCR-15-DOI-Climate-Change-Confirmation-170428.pdf> (last accessed 14 June 2019).

<sup>70</sup> “DOI Further Restricts Access to Climate Change Web Pages.” EDGI.  
<https://envirodatagov.org/aar-11-doi-climate-190228/> (last accessed 14 June 2019).

<sup>71</sup> “Energy Revolution Unleashed: Interior Shatters Previous Records with \$1.1 Billion in 2018 Oil and Gas Lease Sales.” DOI.  
<https://www.doi.gov/news/energy-revolution-unleashed-interior-shatters-previous-records-11-billion-2018-oil-and-gas> (last accessed 14 March 2019).

<sup>72</sup> <http://web.archive.org/web/20160429131737/https://www.doi.gov/watersmart>;  
<http://web.archive.org/web/20180618113435/https://www.doi.gov/watersmart> (last accessed 18 October 2018).

had mentioned climate change ([2016 version](#)).<sup>73</sup> All together, the DOI removed half of the text on the page.

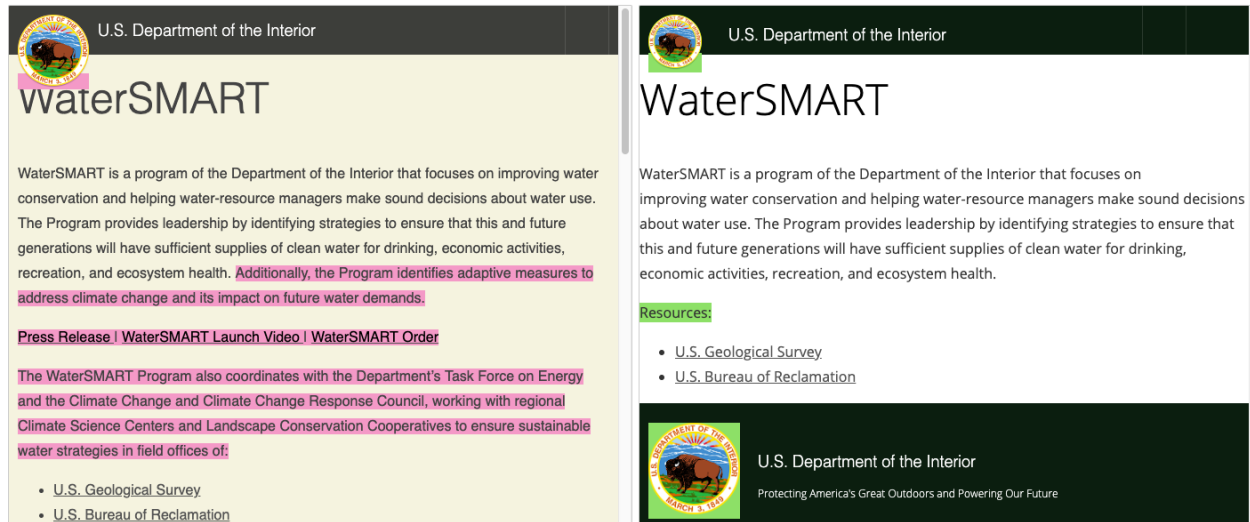


Figure 6. The Department of Interior removed mentions of climate change from its [WaterSMART program](#) page.

Within the U.S. Department of Agriculture (USDA), the U.S. Forest Service (USFS) overhauled its [“Wilderness”](#) page between 2016 and 2018.<sup>74</sup> The agency rewrote a section of the page with the heading “What is wilderness?” ([2018 version](#)).<sup>75</sup> This section previously noted “global climate change” among changes that “affect the ecological character and function of wilderness” ([2016 version](#)).<sup>76</sup> In removing the reference to “global climate change,” USFS is suggesting to the public that it is not an important factor in the health and functioning of wildernesses, much less the agency’s own stewardship of such areas.

Beyond individual bureaus or departments, cross-agency programs such as the U.S. Global Change Research Program (USGCRP) have downplayed climate change on their websites. The USGCRP is an inter-agency effort to synthesize knowledge about global environmental and climate change. Most notably, it produces the Congressionally-mandated National Climate Assessments, the [most recent of which was published in November 2018](#).<sup>77</sup> Despite continuing to advance public understanding of climate change, such as through the 2018 NCA, USGCRP’s webpage titled [“Understand climate change”](#) was altered between 2016 and 2018.<sup>78</sup>

<sup>73</sup> <http://web.archive.org/web/20160429131737/https://www.doi.gov/watersmart> (last accessed 18 October 2018).

<sup>74</sup> <http://web.archive.org/web/20160611150317/http://www.fs.fed.us/managing-land/wilderness> (last accessed 18 October 2018).

<sup>75</sup> <http://web.archive.org/web/20180628180934/https://www.fs.fed.us/managing-land/wilderness> (last accessed 18 October 2018).

<sup>76</sup> <http://web.archive.org/web/20160611150317/http://www.fs.fed.us/managing-land/wilderness> (last accessed 18 October 2018).

<sup>77</sup> <https://nca2018.globalchange.gov/> (last accessed 14 June 2019).

<sup>78</sup> <http://web.archive.org/web/20160510074058/http://www.globalchange.gov/climate-change> (last accessed 18 October 2018).

The page remains live and [continues to state](#) “Climate change is happening now,” but a section on “USGCRP’s Role” in combating climate change was removed.<sup>79</sup> The section referenced the [Climate Action Plan](#) and how it invoked “the critical role of USGCRP in developing sound science to manage climate change impacts” (the Climate Action Plan was [rescinded](#) in May 2017).<sup>80</sup> This section also contained a link to a webpage dedicated to explaining “[USGCRP’s Role](#).”<sup>81</sup> However, [this page has since been restricted](#) from public access – navigating there results in an “Access Denied” message – even though [it discussed](#) currently ongoing legal mandates (through 2021) to develop global change science for the public.<sup>82</sup> With these removals and this restriction, USGCRP is confusing the public not simply about how important climate change is, but what their and the program’s own role in understanding and responding to it is. Removing further reference and access to “USGCRP’s role” undermines the program’s claims that climate change is a priority – that it really is “happening now” and that USGCRP is at “the center of the Federal Government’s efforts” to address it.

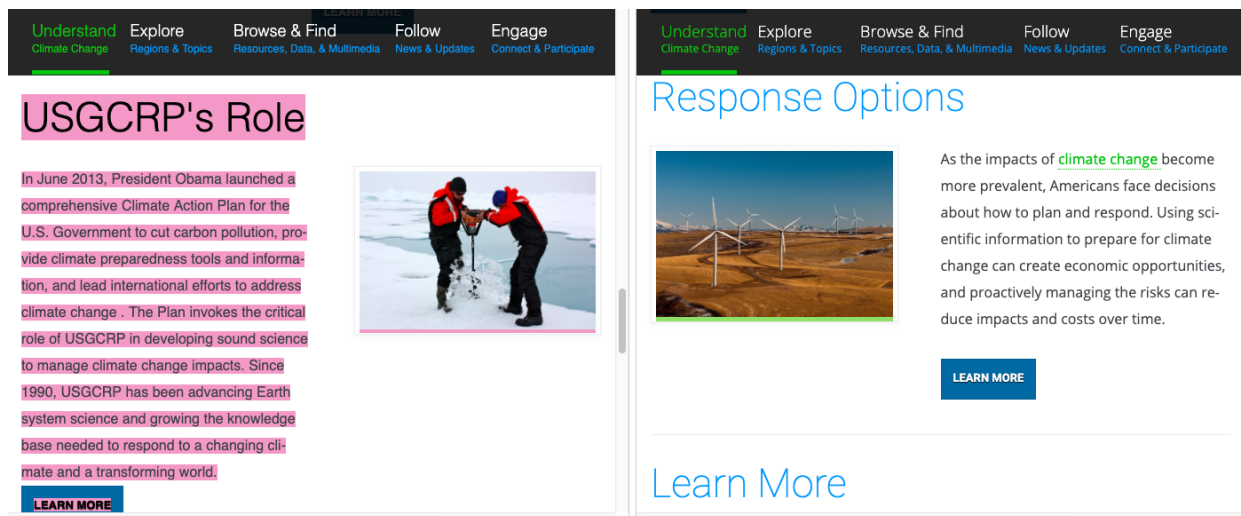


Figure 7. USGCRP’s webpage titled “[Understand climate change](#)” was altered between 2016 (left) and 2018 (right). The page remains live and [continues to state](#) “Climate change is happening now,” but a section on “USGCRP’s Role” in combating climate change was removed.

<sup>79</sup> <http://web.archive.org/web/20180609213708/https://www.globalchange.gov/climate-change> (last accessed 18 October 2018).

<sup>80</sup> <https://obamawhitehouse.archives.gov/sites/default/files/image/president27climateactionplan.pdf>; <https://www.whitehouse.gov/presidential-actions/presidential-executive-order-promoting-energy-independence-economic-growth/> (last accessed 14 June 2019).

<sup>81</sup> <http://web.archive.org/web/20160522053226/http://www.globalchange.gov/climate-change/usgcrps-role> (last accessed 18 October 2018).

<sup>82</sup> <https://www.globalchange.gov/climate-change/usgcrps-role> (last accessed 14 June 2019); <https://web.archive.org/web/20180305151220/https://www.globalchange.gov/climate-change/usgcrps-role> (last accessed 18 October 2018).

## Changing descriptions of science and scientists

Our findings indicate subtle, yet systematic modifications to how climate change is portrayed and prioritized in relation to issues such as wilderness protection, water management, and foreign affairs. Beyond this, we find shifts in how climate change science and scientists are characterized.

For instance, EPA's Science Matters site is a main avenue into the scientific research that the agency does. The page describing EPA researchers' work was altered to reclassify the research groups ([2016 version](#)).<sup>83</sup> The Climate Change researchers category was dissolved, and individual climate scientists were moved into "Ecosystems," "Health," and others ([2018 version](#)).<sup>84</sup> Based on these researchers' bios, it does not appear they have shifted their actual work. A similar modification was made at the Earth Systems Research Laboratory (ESRL) in the National Oceanic and Atmospheric Administration (NOAA), in which mentions of climate change in researchers' work were removed ([2016 version](#)).<sup>85</sup> In all cases, "climate change" was reduced to "climate" ([2018 version](#)).<sup>86</sup> For instance, this sentence:

With precision laboratory work, this research group targets trace gases, aerosols and atmospheric chemical processes affecting air quality, ozone depletion, and *climate change*. (emphasis added)

was changed to:

With precision laboratory work, this research group targets trace gases, aerosols and atmospheric chemical processes affecting air quality, ozone layer depletion, and *climate*. (emphasis added).

Colloquially, climate change and climate are often used interchangeably, but they are substantively different objects of study. It is not clear that "climate" can – in the case of ESRL researchers or other descriptions of science/scientists – actually stand in for "climate change." Likewise, at the Department of Energy's (DOE) Biological and Environmental Research (BER) program, climate change was removed from the description of what BER scientists do ("climate change" was modified to "regional

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<sup>83</sup> <http://web.archive.org/web/20160414023907/https://www.epa.gov/sciencematters/researchers-work> (last accessed 18 October 2018).

<sup>84</sup> <http://web.archive.org/web/20180630143140/https://www.epa.gov/sciencematters/researchers-work> (last accessed 18 October 2018).

<sup>85</sup> <http://web.archive.org/web/20160104174521/http://www.esrl.noaa.gov/csd/groups/> (last accessed 18 October 2018).

<sup>86</sup> <http://web.archive.org/web/20180615231745/https://www.esrl.noaa.gov/csd/groups/> (last accessed 18 October 2018).

climate”) ([2016 version](#), [2018 version](#)).<sup>87</sup> Additionally, mention of “climate modeling” was scrubbed and mention of “analysis of impacts and interdependencies of climatic change with energy production and use” was altered to replace “climatic change” with “environment.” This sentence:

“...climate change and environmental modeling; and analysis of impacts and interdependencies of climatic change with energy production and use”

was changed to:

“environmental and earth system modeling; and analysis of impacts and interdependencies of energy production and the environment.”

One of the research facilities listed on the BER page had its name changed from “[ARM Climate Research Facility](#)” to simply “[ARM Research Facility](#).”<sup>88</sup>

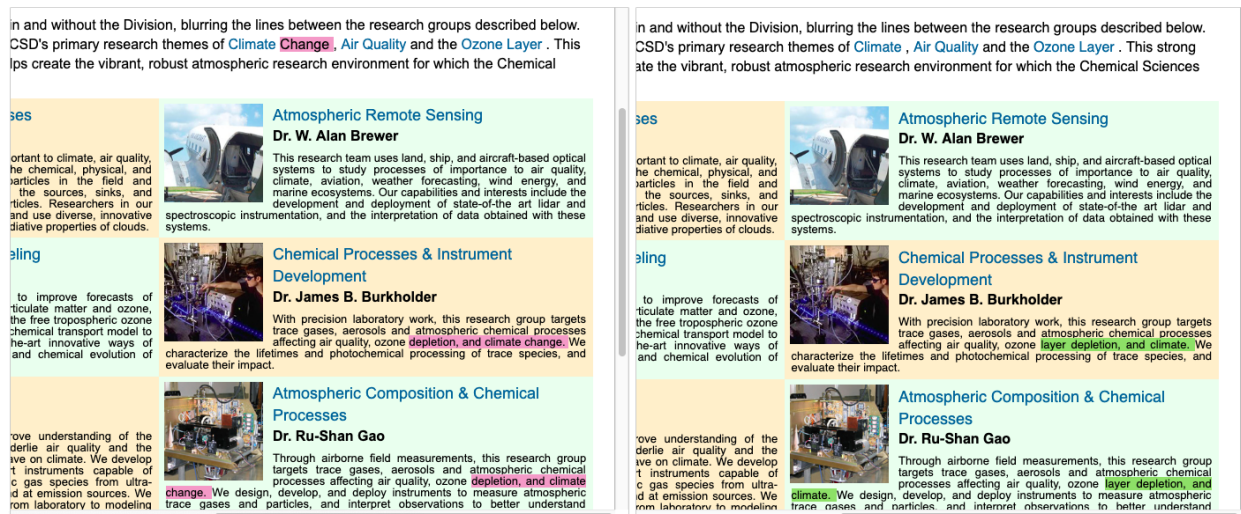


Figure 8. At the Earth Systems Research Laboratory (ESRL) in the National Oceanic and Atmospheric Administration (NOAA), mentions of climate change in researchers’ work were removed.

We also saw modifications to the use of “climate change” in defining related concepts. For instance, definitions on the U.S. Climate Resilience Toolkit’s Glossary page were altered, removing several direct uses of the term “climate change.” On the [2016 version](#) of the page, “climate change” was used in the definition of three other terms.<sup>89</sup> For instance, the definition of “Impacts” was modified from “Effects

<sup>87</sup> <http://web.archive.org/web/20160623112302/http://science.energy.gov/ber/research/>; <http://web.archive.org/web/20180602044039/https://science.energy.gov/ber/research/> (last accessed 18 October 2018).

<sup>88</sup> <http://web.archive.org/web/20170114152517/https://www.arm.gov/>; <http://web.archive.org/web/20190310172255/https://www.arm.gov/> (last accessed 18 October 2018).

<sup>89</sup> <http://web.archive.org/web/20160620172205/https://toolkit.climate.gov/content/glossary> (last accessed 18 October 2018).

on natural and human systems due to extreme weather, climate events, and climate change” to “Effects on natural and human systems that result from hazards.” The terms “extreme weather,” “climate events,” and “climate change” were all removed from the definition and replaced by the vague term “hazards.” Despite these removals, the Glossary page saw one addition of the term “climate change.” On the [2018 version](#) of the page, a definition for the term “mitigation” was added: “Processes that can reduce the amount and speed of future climate change by reducing emissions of heat-trapping gases or removing them from the atmosphere.”<sup>90</sup>

The “Scenarios” subdomain on [globalchange.gov](#) saw a reduction in the use of the term “climate change.” On the [2016 version](#) of the page, there were six mentions of “climate change” throughout the main body of text.<sup>91</sup> The top of both versions of the page featured a question about climate change consequences:

“What are scenarios for assessment of *climate change impacts* and potential responses?” (2016; emphasis added)

“What are scenarios for assessment of *potential climate change risks* and responses?” (2018; emphasis added)

The 2018 version downplays the present reality of climate change impacts and emphasizes potential risks instead. Likewise, the opening sentence of the page stated, “Scenarios are quantitative and narrative descriptions of plausible future conditions that provide assumptions for analyses of potential impacts and responses to climate change.” In 2018, this became: “Scenarios are coherent, internally consistent, and plausible descriptions of possible future states of the world.” Much of the remaining explanatory text was replaced. The 2016 version of the page featured a scenario for “Land Cover, Land Use, and Socioeconomic Factors” that included climate change in its description. However, the [2018 version](#) has a new land use scenario titled “Population and Land Use” that does not reference “climate change” in its description.<sup>92</sup>

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<sup>90</sup> <http://web.archive.org/web/20180102162052/https://toolkit.climate.gov/content/glossary> (last accessed 18 October 2018).

<sup>91</sup> <http://web.archive.org/web/20160508001503/http://scenarios.globalchange.gov/content/scenarios> (last accessed 18 October 2018).

<sup>92</sup> <http://web.archive.org/web/20180618151630/https://scenarios.globalchange.gov/content/scenarios> (last accessed 18 October 2018).

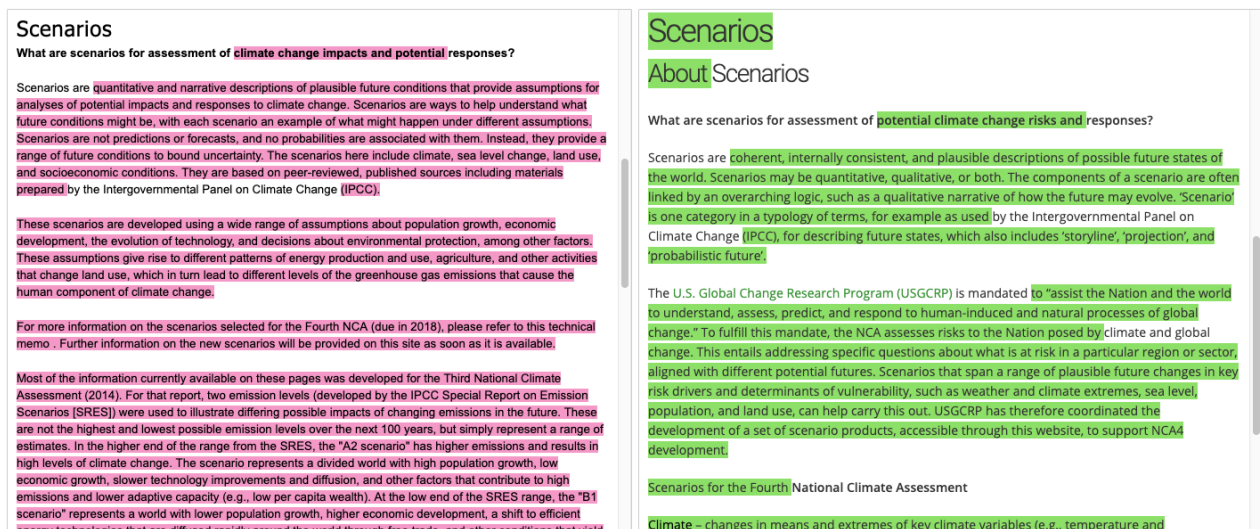


Figure 9. The “Scenarios” subdomain on globalchange.gov saw a reduction in use of the term “climate change.”

## Modifying access to and description of resources

Beyond diminishing climate change as a priority factor in environmental management, and altering descriptions of what climate change science is and what climate change researchers do, agencies have restricted access to key informational resources, either by removing links to these pages, removing the pages themselves from the public domain, or by modifying descriptions of what those resources are.

Comparable to EPA’s withdrawal of [epa.gov/climatechange](http://epa.gov/climatechange), the Department of Transportation (DOT) removed its entire “Transportation and Climate Change Clearinghouse” subdomain located at the URL [climate.dot.gov](http://climate.dot.gov) sometime in late March 2017. The Clearinghouse was [a significant endeavor and collated many resources](#) into one central location.<sup>93</sup> Its removal was eventually highlighted [by CNN](#), though the number of pages impacted was likely underreported.<sup>94</sup> The last live capture of the [climate.dot.gov](http://climate.dot.gov) saved in the Internet Archive’s Wayback Machine was on [March 29, 2017](#).<sup>95</sup> By [April 29, 2017](#), the page returned an error and by [May 4, 2017](#) the page redirected to a new URL: <https://www.transportation.gov/climate-change-clearinghouse>.<sup>96</sup> However, this new

<sup>93</sup> <https://web.archive.org/web/20170202044851/https://www.climate.dot.gov/about-the-center.html> (last accessed 18 October 2018).

<sup>94</sup> “Access denied: 2 climate change pages removed from DOT’s website.” *CNN*. <https://www.cnn.com/2018/12/14/politics/dot-climate-change-webpages-removed-global-warming/index.html> (last accessed 14 June 2019).

<sup>95</sup> <https://web.archive.org/web/20170329072414/https://climate.dot.gov/> (last accessed 18 October 2018).

<sup>96</sup> <https://web.archive.org/web/20170429183644/http://climate.dot.gov/>;  
<https://web.archive.org/web/20170504015206/http://climate.dot.gov/> (last accessed 18 October 2018).



page was also removed – the Clearinghouse was available at this URL until [October 4, 2018](#).<sup>97</sup>

Only some of the pages and topics under the Clearinghouse remain (e.g. one [describing greenhouse gas emissions from aviation](#)) but they are poorly maintained.<sup>98</sup> For instance, the page on greenhouse gas emissions from non-surface transportation sources is incomplete, featuring only aviation-related material, and with links to the 2006 IPCC report rather than more recent ones. The climate.dot.gov site also previously featured [discussion of greenhouse gas emissions reduction strategies](#).<sup>99</sup> This included transportation planning and public transit, as well as biofuels-based approaches. Although an analogous page exists in the new transportation.gov/sustainability/climate subdirectory, it automatically directs visitors to [a page focused solely on biofuels and other alternative fuels](#).<sup>100</sup>

DOT [claims](#) that material on the Clearinghouse site was “outdated” and that its policy is to archive such content.<sup>101</sup> But it is not clear where the material has been archived, why users are not redirected to this archive, why the DOT has not removed other outdated material, or why the DOT has chosen not to update the content.

Likewise, EPA has withdrawn climate change resources from the public domain without explanation. In December 2018, we scanned approximately [10,000 URLs across the EPA website](#).<sup>102</sup> We [found](#) 334 either redirected to other URLs, were “restricted access” (403 error), or no longer existed (404 error).<sup>103</sup> The “restricted access” pages are especially troubling as they suggest to the page visitor that the page still exists, but that the agency is preventing them from seeing it without clear rationale. The EPA’s message is simply: “Sorry, but this web page is not available for viewing right now. This page is not available for viewing either because EPA has not published it yet, or because EPA has allowed the publication of this page to lapse.” No further details are given. The 57 pages that were restricted address important climate change issues, including [climate change research](#) and components of the [Greenhouse Gas Reporting Program](#), as well as [environmental protection on Tribal](#)

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<sup>97</sup> <https://web.archive.org/web/20181004103312/https://www.transportation.gov/climate-change-clearinghouse> (last accessed 18 October 2018).

<sup>98</sup> <https://www.transportation.gov/sustainability/climate/aviation-marine-rail-aviation> (last accessed 14 June 2019).

<sup>99</sup>

<https://web.archive.org/web/20170202083810/https://www.climate.dot.gov/ghg-reduction-strategies/index.html> (last accessed 18 October 2018).

<sup>100</sup> <https://www.transportation.gov/sustainability/climate/fuels-and-vehicle-technology> (last accessed 14 June 2019).

<sup>101</sup> “Access denied: 2 climate change pages removed from DOT’s website.” *CNN*.

<https://www.cnn.com/2018/12/14/politics/dot-climate-change-webpages-removed-global-warming/index.html> (last accessed 14 June 2019).

<sup>102</sup> List of EPA URLs: [https://drive.google.com/file/d/12DSwTQhLhXXiX1\\_qL0TKU-cl0HpH8R9W/view?usp=sharing](https://drive.google.com/file/d/12DSwTQhLhXXiX1_qL0TKU-cl0HpH8R9W/view?usp=sharing).

<sup>103</sup> List of “missing” – restricted access, redirected, or removed – EPA URLs:

[https://drive.google.com/file/d/1dyr6j7\\_jwxpr9a7vXpluhqbk-K5rqaRm/view?usp=sharing](https://drive.google.com/file/d/1dyr6j7_jwxpr9a7vXpluhqbk-K5rqaRm/view?usp=sharing).

[lands](#) and international cooperation (these alone accounted for 16 out of the 57 restricted pages, and include a page on [cooperation on e-waste issues](#)).<sup>104</sup>

Beyond restricted access to resources, we found modified descriptions of them. The USGCRP removed links to internally-produced resources on climate change. Across its “indicators” pages, which describe different measures of global change, the program removed links to the National Climate Assessment, its [process for engaging stakeholders in the NCA](#), and its [Information System](#) where data on indicators can be accessed (e.g. [this indicator page, 2016; 2018](#)).<sup>105</sup> On EPA’s main air quality research page ([epa.gov/air-research](#)), the description of [a link](#) to climate change teaching material was renamed “Educational Outreach Resources” ([2018 version](#)) from “Hands-on Activities and Other Resources on Air Quality and Climate Change for Teachers” ([2016 version](#)).<sup>106</sup> In addition, the [linked-to page itself](#) has been renamed to remove reference to climate change.<sup>107</sup> Also on the main air quality research page, a link to a “Featured Resource” – a podcast on “Engaging Students on Energy and Climate Change” – was removed. Some regular updating of featured resources is to be expected, but access to the entire archive of the [podcast series](#) was restricted in early 2019 (compare [February 2019](#), [March 2019](#)).<sup>108</sup>

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<sup>104</sup> <https://www.epa.gov/water-research/water-and-climate-change-research>;  
<https://www.epa.gov/ghgreporting/subpart-w-basic-information>;  
<https://www.epa.gov/tribal/solid-and-hazardous-waste-indian-country-resource-conservation-and-recovery-act-rcra>; <https://www.epa.gov/international-cooperation/e-waste-around-world> (last accessed 14 June 2019).

<sup>105</sup> <http://www.globalchange.gov/engage/process-products/sustained-assessment>;  
[https://data.globalchange.gov/report?report\\_type=indicator](https://data.globalchange.gov/report?report_type=indicator);  
[http://www.globalchange.gov/browse/indicators?f\[0\]=field\\_indicator\\_topics%3A94](http://www.globalchange.gov/browse/indicators?f[0]=field_indicator_topics%3A94) (last accessed 14 June 2019);  
[http://web.archive.org/web/20160427063658/http://www.globalchange.gov/browse/indicators?f\[0\]=field\\_indicator\\_topics%3A94](http://web.archive.org/web/20160427063658/http://www.globalchange.gov/browse/indicators?f[0]=field_indicator_topics%3A94);  
[http://web.archive.org/web/20180609220057/https://www.globalchange.gov/browse/indicators?f\[0\]=field\\_indicator\\_topics%3A94](http://web.archive.org/web/20180609220057/https://www.globalchange.gov/browse/indicators?f[0]=field_indicator_topics%3A94) (last accessed 18 October 2018).

<sup>106</sup> <https://www.epa.gov/air-research/hands-activities-and-other-resources-air-quality-and-climate-change-teachers> (last accessed 14 June 2019); <http://web.archive.org/web/20180628232311/https://www.epa.gov/air-research>;  
<http://web.archive.org/web/20160531060948/https://www.epa.gov/air-research> (last accessed 18 October 2018).

<sup>107</sup> <https://www.epa.gov/air-research/air-quality-and-energy-choice-stem-activities-educators> (last accessed 14 June 2019).

<sup>108</sup> <https://www.epa.gov/research/science-bite-podcasts#pecase> (last “accessed” 14 June 2019);  
<http://web.archive.org/web/20190214185727/https://www.epa.gov/research/science-bite-podcasts>;  
<http://web.archive.org/web/20190311115908/https://www.epa.gov/research/science-bite-podcasts> (last accessed 18 October 2018).

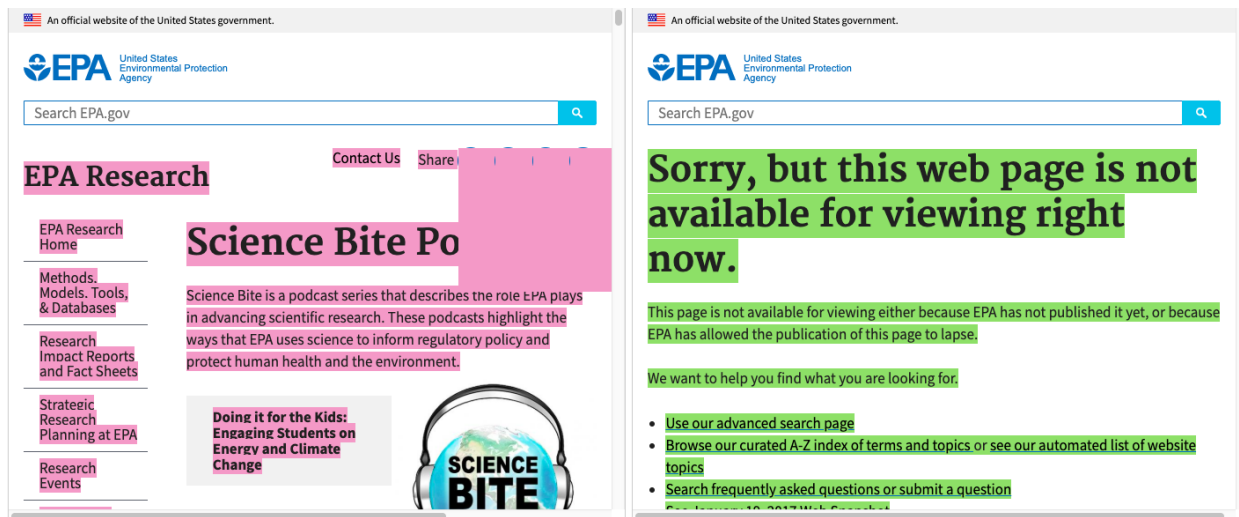


Figure 10. Access to the entire archive of EPA's Science Bite [podcast series](#) was restricted in early 2019.

We found other federal agencies reducing links, including those pointing to non-governmental organizations. NIEHS overhauled its “[Environmental Science Basics](#)” page, removing all links to non-governmental organizations, including a link and description for “EnviroHealthAction,” a program run by the Nobel Peace Prize-winning Physicians for Social Responsibility.<sup>109</sup> [In 2016](#), the description for the organization stated that it was an “education and action center that provides an online community for health professionals and others interested in environmental health.”<sup>110</sup> One topic that the center was listed as addressing was climate change. [By 2018](#), the links to EnviroHealthAction and other resources had been removed.<sup>111</sup>

## Other terms related to climate change

By analyzing the use of other, climate change-related, terms, we find that the administration has likewise attempted to undermine public discourse, specifically around climate impacts, mitigation, and adaptation. We note an *increase* in discussion of impacts, but a shift *away* from key mitigation approaches and an emphasis on “resilience.” This trend is consistent with research on environmental governance<sup>112</sup> and [media reporting](#)<sup>113</sup> which suggest that responding to impacts

<sup>109</sup> <https://www.niehs.nih.gov/health/topics/science/index.cfm>; <https://www.psr.org/issues/environment-health/> (last accessed 12 June 2019).

<sup>110</sup> <http://web.archive.org/web/20180621020912/https://www.niehs.nih.gov/health/topics/science/index.cfm> (last accessed 18 October 2018).

<sup>111</sup> <http://web.archive.org/web/20180621020912/https://www.niehs.nih.gov/health/topics/science/index.cfm> (last accessed 18 October 2018).

<sup>112</sup> For instance, see: Beymer-Farris, B. A., T. J. Bassett, and I. Bryceson. 2012. Promises and pitfalls of adaptive management in resilience thinking: the lens of political ecology. In *Resilience and the Cultural Landscape*, eds. T. Plieninger and C. Bieling, 283–300. Cambridge: Cambridge University Press; Kaika, M. 2017. ‘Don’t call me resilient again!’: the New Urban Agenda as immunology... or... what happens when communities refuse to be vaccinated with ‘smart cities’ and indicators. *Environment and Urbanization* 29 (1):89–102.

<sup>113</sup> “In Flood-Hit Midwest, Mayors See Climate Change as a Subject Best Avoided.” *New York Times*. <https://www.nytimes.com/2019/05/15/us/midwest-flooding-climate-change.html> (last accessed 14 June 2019).

may be more politically palatable than implementing climate change mitigation measures, and that “resilience” can be used to obscure hard truths about who will lose from climate crisis.

For this next part of our analysis, we filter our sample of pages to only those that mentioned “climate,” “climate change,” or “greenhouse gases” in the Obama era. That helps us be more certain that any shifts we observe in climate change-related terms like “wildfires” stem from their use in relation to climate change. For instance, when we see decreases in the use of the term “adaptation,” we can be more sure that its removal is in the context of climate change, not adaptation generally, because it was originally discussed on pages where climate, climate change, and/or greenhouse gases were also topics.

### Climate change impacts

Discussion of the visible and experienced outcomes of climate change – such as extreme weather with droughts, wildfires, storms and floods – is crucial for public understanding of climate change. In 2018, much of the southwestern United States [experienced persistent drought conditions](#), California had the [deadliest wildfire season in history](#), the Gulf Coast and Southeast U.S. were [bombarded by 8 hurricanes](#), and [flooding plagued the nation](#).<sup>114</sup>

The term “wildfires” decreased by 47% across our sample of the EPA website, mostly due to the removal of the [epa.gov/climatechange](#) website. On the Forest Service website, the term “wildfires” also decreased in total by 47%, even though USFS is tasked with mitigating and responding to wildfires. Interestingly, however, “wildfires” increased on pages that also contained the word “climate change” from 3 uses to 5 uses across 4 pages. On pages we sampled on the FEMA website, the term “wildfire” increased from 0 uses to 14 total mentions, deriving from links to [a new page](#) focused on the connections between wildfires and flooding.<sup>115</sup>

The term “droughts” decreased across our sample of the EPA website by 86%, again mostly due to the removal of the [epa.gov/climatechange](#) website. On the DOI website, there were only a few references to drought on the pages we sampled. Both references to droughts on DOI’s primary landing page for water issues, [www.doi.gov/water](#), were struck. In [2016](#), the “Water Challenges” section referred to

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<sup>114</sup> <https://earthobservatory.nasa.gov/images/144216/drought-persists-in-the-us-southwest>;  
[https://web.archive.org/web/20190626025601/https://www.fire.ca.gov/communications/downloads/fact\\_sheets/Top20\\_Destruction.pdf](https://web.archive.org/web/20190626025601/https://www.fire.ca.gov/communications/downloads/fact_sheets/Top20_Destruction.pdf);  
<https://www.noaa.gov/media-release/destructive-2018-atlantic-hurricane-season-draws-to-end>;  
[https://www.usgs.gov/mission-areas/water-resources/science/historical-flooding?qt-science\\_center\\_objects=0#qt-science\\_center\\_objects](https://www.usgs.gov/mission-areas/water-resources/science/historical-flooding?qt-science_center_objects=0#qt-science_center_objects) (last accessed 14 June 2019).

<sup>115</sup> <https://www.fema.gov/wildfires-you-need-flood-insurance> (last accessed 14 June 2019).

“lengthening droughts” as one of three primary water issues the nation faced.<sup>116</sup> In the 2018 version of the DOI water landing page, titled “Clean Water,” reference to droughts and all other challenges was removed.<sup>117</sup>

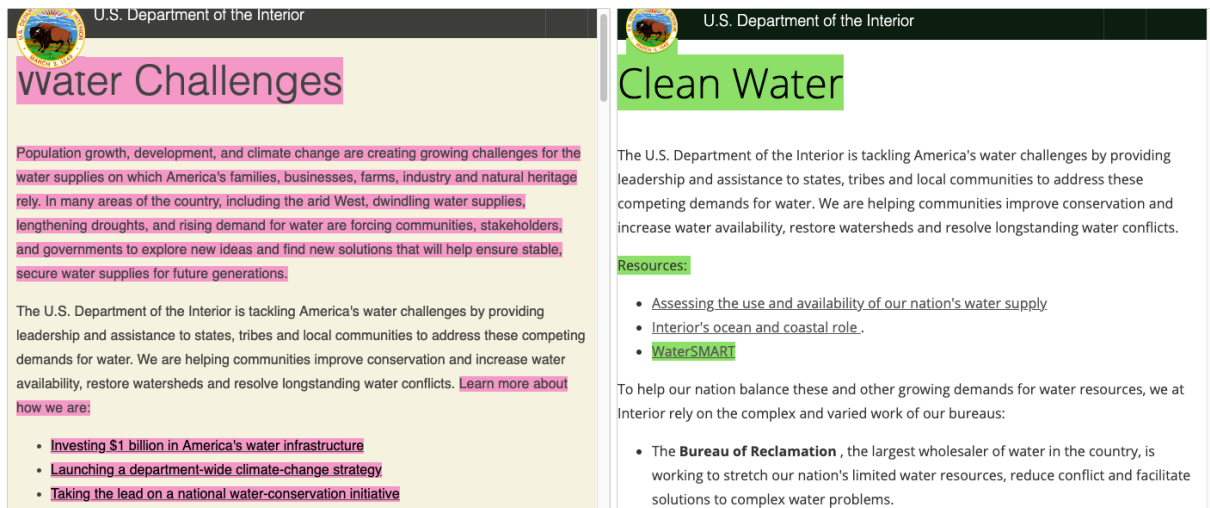


Figure 11. DOI removed reference to droughts on its main water page.

The term “storms” was also used less on the EPA website, where the 78% decrease across our sample was again driven by the withdrawal of EPA’s Climate Change website from public access. On the NOAA website, there was a 3% increase in mention of “storms,” mostly in explanations of tools and programs, such as the Geostationary Observational Environmental Satellite (compare the FAQ page in 2016 and 2018).<sup>118</sup> On the FEMA website, there was an increase from 4 to 8 mentions of the term “storms” across the 34 pages in the sample. Most of this doubling of the use of this term came on the Texas Disaster Mitigation webpage, which after Hurricane Harvey focused more on information about preparing for severe storms in 2018 than it had in 2016.<sup>119</sup>

## Mitigating climate change

As the carbon dioxide concentration in the atmosphere continues to climb, storms intensify, and sophisticated modeling tells us about potential futures we face, ways to reduce climate change must be discussed. The [latest special IPCC report](#), released in fall 2018, predicts catastrophic consequences if there is more than 1.5

<sup>116</sup> <http://web.archive.org/web/20160429130520/https://www.doi.gov/water> (last accessed 18 October 2018).

<sup>117</sup> <http://web.archive.org/web/20180618113353/https://www.doi.gov/water> (last accessed 18 October 2018).

<sup>118</sup> <https://web.archive.org/web/20160504234150/http://www.goes-r.gov/resources/faqs.html>;  
<http://web.archive.org/web/20180522100448/https://www.goes-r.gov/resources/faqs.html> (last accessed 18 October 2018).

<sup>119</sup> <http://web.archive.org/web/20180515122559/https://www.fema.gov/Texas-disaster-mitigation>;  
<http://web.archive.org/web/20160406193447/http://www.fema.gov/texas-disaster-mitigation> (last accessed 18 October 2018).

degrees Celsius further average warming.<sup>120</sup> The [largest source of carbon emissions](#) to the atmosphere in the United States is the burning of fossil fuels for electricity and energy; the term that we analyzed that most pertained to mitigating climate change is “clean energy.”<sup>121</sup>

The two agencies that most discussed clean energy in the context of climate change were DOE and EPA. As seen in Table 2, there was a 28% decrease on the DOE website and a 70% decrease on the EPA website in the use of the term “clean energy” between 2016 and 2018 versions of webpages.

Agency	Obama count on pages with “climate change”	Trump count on pages with “climate change”	% change
DOE	162	117	-27.78
EPA	149	45	-69.80

Table 2. The change in use of the term “clean energy” on pages in our sample that also contain the term “climate change.”

At DOE, the 28% decrease in mentions of “clean energy” was driven by a few important changes. The National Renewable Energy Lab (NREL) changed its agency slogan from “Leading Clean Energy Innovation” to “40 years of energy innovation.” Quantitatively, this modification accounted for many of the removals of “clean energy,” and does demonstrate a rhetorical shift. There was also a significant decrease in discussion of clean energy on DOE’s Science Innovation and Technology Transitions pages. Within the Science Innovation subdirectory, sections for featured content and blogs were removed from both the Innovation page ([2016](#), [2018](#)) and the Science & Technology page ([2016](#), [2018](#)).<sup>122</sup> Most of the content in those sections had revolved around clean energy. On the Technology Market Program page (part of the Technology Transitions subdirectory), links and descriptions for what the program does were shortened or removed between the [2016 version](#) and the [2018 version](#), with the complete removal of the term “clean energy” from the

<sup>120</sup> “Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C approved by governments.” IPCC.

<https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/> (last accessed 12 June 2019).

<sup>121</sup> <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions> (last accessed 14 June 2019).

<sup>122</sup> <http://web.archive.org/web/20160616131422/http://energy.gov/science-innovation/innovation>;  
<http://web.archive.org/web/20180616023551/https://www.energy.gov/science-innovation/innovation>;  
<http://web.archive.org/web/20160612054657/http://www.energy.gov/science-innovation/science-technology>;  
<http://web.archive.org/web/20180616004134/https://www.energy.gov/science-innovation/science-technology>  
 (last accessed 18 October 2018).

page.<sup>123</sup> While not included here in our term count due to a change in page URLs, the term “clean energy” was also removed from the titles of certain programs. For instance, the Clean Energy Investment Center was renamed to the Energy Investor Center, as detailed in [EDGI’s report](#) from 2017.<sup>124</sup>

DOE also reduced its use of the term “clean energy” on pages about its international partnerships. On the Office of Energy Efficiency & Renewable Energy (EERE)’s Americas Region Partnerships and Projects page, all references to the [Energy and Climate Partnership of the Americas](#) – and the clean energy future envisioned in that multinational partnership – were removed between [2016](#) and [2018](#).<sup>125</sup> The term “clean energy” was also removed from the description of the goals of bilateral partnerships with Brazil and Canada.

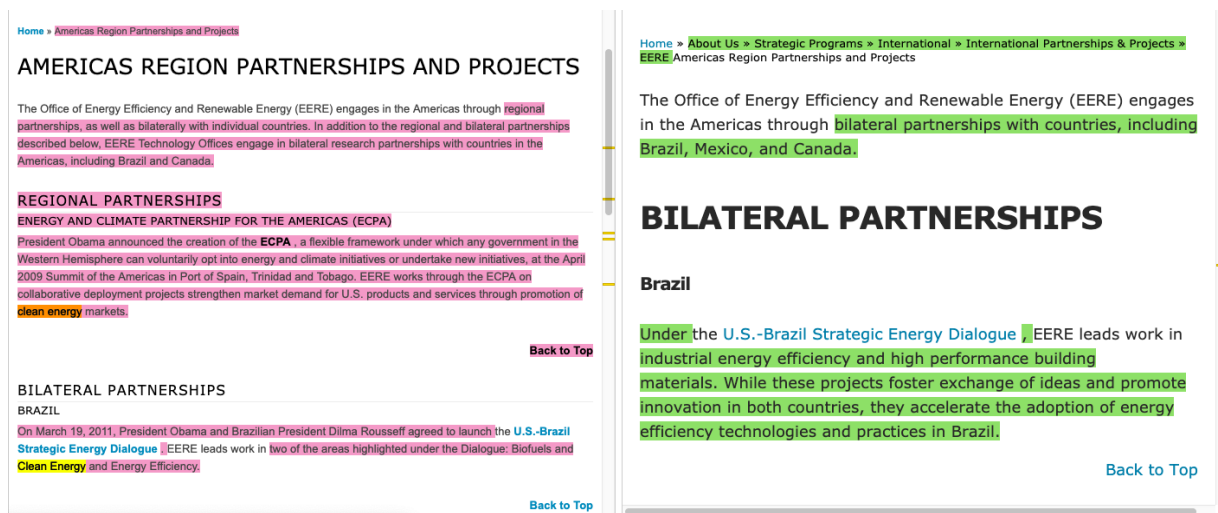


Figure 12. On the Office of Energy Efficiency & Renewable Energy (EERE)’s Americas Region Partnerships and Projects page, all references to the [Energy and Climate Partnership of the Americas](#) – and the clean energy future envisioned in that multinational partnership – were removed between [2016](#) and [2018](#).

On the EPA domain, a 70% decrease in the use of “clean energy” was driven by the removal of the Climate Change website ([epa.gov/climatechange](http://epa.gov/climatechange)) and the Climate and Energy Resources for State, Local, and Tribal Government website ([epa.gov/statelocalclimate](http://epa.gov/statelocalclimate)). Even though the latter [was replaced by the Energy](#)

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<http://web.archive.org/web/20160626112925/http://energy.gov/technologytransitions/about-technology-market-program>;  
<http://web.archive.org/web/20180123050621/https://energy.gov/technologytransitions/about-technology-market-program> (last accessed 18 October 2018).

<sup>124</sup> “Changes to the Department of Energy’s Office of Technology Transitions Website.” EDGI. <https://envirodatagov.org/wp-content/uploads/2017/07/WM-CCR-16-DOE-Office-of-Technology-Transitions-170520.pdf> (last accessed 14 June 2019).

<sup>125</sup> <http://www.ecpamericas.org/About-ECPA.aspx> (last accessed 14 June 2019);  
<http://web.archive.org/web/20160604134607/http://energy.gov/eere/about-us/americas-region-partnerships-and-projects>;  
<http://web.archive.org/web/20180616002111/https://www.energy.gov/eere/about-us/americas-region-partnerships-and-projects> (last accessed 18 October 2018).

## [Resources for State, Local, and Tribal Government website](#)

([epa.gov/statelocalenergy](http://epa.gov/statelocalenergy)), which had a larger emphasis on energy solutions rather than climate action, there was still a substantial decrease in use of the term “clean energy” across the EPA website. For example, the descriptions of the Green Power Leadership Award Winners included “clean energy” less in [2018](#) versus in [2016](#).<sup>126</sup>

The term “Energy independence” has a long history (see the [Energy Independence and Security Act of 2007](#)), but during Trump’s campaign and presidency, the slogan has been popularized.<sup>127</sup> Trump and his allies have used it frequently to promote domestic coal and oil as fossil fuel sources that can reduce reliance on foreign imports. While the U.S. also has a range of carbon-free domestic energy sources such as wind and solar, the term “energy independence” is rarely used on government websites to connote these sources. Thus, unlike “clean energy,” “energy independence” itself has no explicit connection to climate change mitigation – the U.S. could become energy independent while increasing emissions. We find that the use of the term has increased across federal websites. There is not much change in the use of “energy independence” on DOE’s website, though there is addition of the term to champion wind energy development on the DOE Wind Program page ([2016](#), [2018](#)).<sup>128</sup> On the EPA website however, we see a more than doubling of the use of this term (117% increase), mostly due to the redirecting of each webpage in the Clean Power Plan website to a single new page, [epa.gov/energy-independence](http://epa.gov/energy-independence). The Clean Power Plan (CPP) was an initiative under President Obama to reduce greenhouse gas emissions from electricity production, and the EPA would help states implement the Plan. However, in 2017, the Trump EPA [proposed scrapping the plan](#), and modified its website accordingly: it redirected CPP pages to the new Energy Independence webpage.<sup>129</sup> For example, compare the [2016 version](#) of a CPP fact sheet with the page the public would encounter in [2018](#) due to the redirect.<sup>130</sup> The new Energy Independence webpage discussed EPA’s proposal to remove the CPP. But it provided no context as to what

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<sup>126</sup> “Assessment of Removals and Changes in Access to Resources on the EPA’s ‘Climate and Energy Resources for State, Local, and Tribal Government’ Website.” EDGI.  
<https://envirodatagov.org/wp-content/uploads/2017/10/AAR-5-EPA-State-Local-Climate-Energy-171018.pdf> (last accessed 12 June 2019);

[http://web.archive.org/web/20160417142930id\\_/https://www.epa.gov/greenpower/green-power-leadership-awards](http://web.archive.org/web/20160417142930id_/https://www.epa.gov/greenpower/green-power-leadership-awards);

[http://web.archive.org/web/20180612234209id\\_/https://www.epa.gov/greenpower/green-power-leadership-awards](http://web.archive.org/web/20180612234209id_/https://www.epa.gov/greenpower/green-power-leadership-awards) (last accessed 18 October 2018).

<sup>127</sup> <https://www.epa.gov/laws-regulations/summary-energy-independence-and-security-act> (last accessed 14 June 2019).

<sup>128</sup> <http://web.archive.org/web/20160603235552/http://www.energy.gov/eere/wind/about-doe-wind-program>;  
<http://web.archive.org/web/20180101210206/https://energy.gov/eere/wind/about-doe-wind-program> (last accessed 18 October 2018).

<sup>129</sup>

<https://www.federalregister.gov/documents/2017/10/16/2017-22349/repeal-of-carbon-pollution-emission-guide-lines-for-existing-stationary-sources-electric-utility> (last accessed 14 June 2019).

<sup>130</sup>

<http://web.archive.org/web/20160419210058/https://www.epa.gov/cleanpowerplan/fact-sheet-details-about-proposal-new-sources>; <http://web.archive.org/web/20180102000144/https://www.epa.gov/energy-independence> (last accessed 18 October 2018).



the CPP was or the impacts its repeal would have on air quality, climate change, or public health, [harming the public's ability to comment on the proposal](#).<sup>131</sup>

## Adapting to climate change

In addition to characterizing climate change impacts and developing mitigation strategies, governments should offer plans for ongoing and increasing adjustment to a world with higher carbon dioxide concentrations in the atmosphere and thus warmer temperatures and more drastic regional differences in climate. We counted two terms to assess agencies' discussion of climate change adaptation: "adaptation" and "resilience."

There was a 48% decrease on the EPA website in the use of the term "adaptation" because of the removal of EPA's Climate Change website ([epa.gov/climatechange](http://epa.gov/climatechange)). However, for EPA pages that were *not* a part of the Climate Change website, the use of the term increased between 2016 and 2018. For example, there was an increase in mention of "adaptation" between the [2016 version](#) and the [2018 version](#) of the "Addressing Climate Change in the Water Sector" page, due to the addition of more states with adaptation plans linked to and from it.<sup>132</sup>

On the GlobalChange.gov website, there was a 12.5% decrease in the mention of the term "adaptation," in part due to the removal of items – such as the IPCC's 2014 statement on adaptation – that had been listed in the "Other Reports" section of webpages (for example, compare the [2016 version](#) and [2018 version](#) of the Interagency Crosscutting Group Climate Change and Human Health Factsheet).<sup>133</sup> The term "adaptation" was also removed from pages such as the Interagency Working Group (IAWG) page, which separated out descriptions of each IAWG, including discussion of the Obama-era "Adaptation Science IAWG" ([2016](#), [2018](#)).<sup>134</sup> Note that this IAWG has been renamed the "[Federal Adaptation and Resilience Group](#)."<sup>135</sup>

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<sup>131</sup> "Continued Access to Online EPA Resources Relevant to the Clean Power Plan is Important for Public Engagement in Rulemaking." EDGI. [https://envirodatagov.org/edgi\\_cpp\\_proposed\\_rule\\_comments\\_042618/](https://envirodatagov.org/edgi_cpp_proposed_rule_comments_042618/) (last accessed 14 June 2019).

<sup>132</sup>

<http://web.archive.org/web/20160601135802/https://www.epa.gov/climate-change-water-sector/state-water-agency-practices-climate-adaptation-database>;

<http://web.archive.org/web/20180615004413/https://www.epa.gov/climate-change-water-sector/state-water-agency-practices-climate-adaptation-database> (last accessed 18 October 2018).

<sup>133</sup>

<http://web.archive.org/web/20160423211819/http://www.globalchange.gov/browse/reports/interagency-crosscutting-group-climate-change-and-human-health-factsheet>;

<http://web.archive.org/web/20180610004907/https://www.globalchange.gov/browse/reports/interagency-crosscutting-group-climate-change-and-human-health-factsheet> (last accessed 18 October 2018).

<sup>134</sup> <http://web.archive.org/web/20160601181829/http://www.globalchange.gov/about/iwgs>;

<http://web.archive.org/web/20180610001952/https://www.globalchange.gov/about/iwgs> (last accessed 18 October 2018).

<sup>135</sup> <https://www.globalchange.gov/about/iwgs/farg> (last accessed 14 June 2019).

Indeed, there was an overall 11% increase in mention of the term “resilience,” to describe a positive social or environmental goal. In EPA, there was a 4% increase despite significant removals of the term stemming from the withdrawal of the [epa.gov/climatechange](http://epa.gov/climatechange) website. The EPA changed the description of some of its international work to reflect “resilience,” including adding a thorough description of the work of the United Nations Environment Programme [Global Adaptation Network](#) to its International Climate Adaptation page ([2016](#), [2018](#)).<sup>136</sup> On the [Globalchange.gov](http://Globalchange.gov) website, there was a 42% increase in the use of “resilience” due to the addition of links to two new reports issued by the federal government (e.g. compare [2016](#) and [2018](#) versions of a report browsing page).<sup>137</sup> “Resilience” similarly increased because of additional reports linked to in the “Other Reports” section of several pages (for example, as seen in the [2018 version](#) of a page describing the findings of a report about climate change impacts on U.S. ecosystems.)<sup>138</sup>

## Climate change generalization

Academics, journalists, and others have suggested that “resilience,” “sustainability,” and other terms are watered-down substitutes for explicitly speaking about and addressing climate crises.<sup>139</sup> Some scholars and activists have even suggested that the language of “resilience” legitimates climate change, by accepting the inevitability of impacts and prioritizing how to “bounce back.”<sup>140</sup> As the use of the terms “resilience” and “sustainability” has increased – and the use of terms like “climate

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<sup>136</sup> <http://web.unep.org/ganadapt/global-adaptation-network>;  
<http://web.archive.org/web/20160419091119/https://www.epa.gov/international-cooperation/epas-role-international-climate-adaptation>;  
<http://web.archive.org/web/20180615003114/https://www.epa.gov/international-cooperation/epas-role-international-climate-adaptation> (last accessed 18 October 2018).

<sup>137</sup>

[http://web.archive.org/web/20160427081015/http://www.globalchange.gov/browse/reports?f\[0\]=field\\_report\\_organization%3A175](http://web.archive.org/web/20160427081015/http://www.globalchange.gov/browse/reports?f[0]=field_report_organization%3A175);  
[http://web.archive.org/web/20180610003117/https://www.globalchange.gov/browse/reports?f\[0\]=field\\_report\\_organization%3A175](http://web.archive.org/web/20180610003117/https://www.globalchange.gov/browse/reports?f[0]=field_report_organization%3A175) (last accessed 18 October 2018).

<sup>138</sup>

<http://web.archive.org/web/20180610005419/https://www.globalchange.gov/browse/reports/executive-summary-effects-climate-change-us-ecosystems> (last accessed 18 October 2018).

<sup>139</sup> Resilience is noted as a “slippery” and “malleable” concept – Simin Davoudi, Keith Shaw, L. Jamila Haider, Allyson E. Quinlan, Garry D. Peterson, Cathy Wilkinson, Hartmut Fünfgeld, Darryn McEvoy, Libby Porter & Simin Davoudi (2012) Resilience: A Bridging Concept or a Dead End? *Planning Theory & Practice*, 13:2, 299-333, DOI: 10.1080/14649357.2012.677124; “...the fuzzy concept of resilience, as currently articulated, faces the prospect of becoming a rubric which replaces sustainability as the new ‘catch-all’ term that acts as all things to all people.” Darryn McEvoy, Hartmut Fünfgeld & Karyn Bosomworth (2013) Resilience and Climate Change Adaptation: The Importance of Framing, *Planning Practice & Research*, 28:3, 280-293, DOI: 10.1080/02697459.2013.787710; “Don’t call it ‘climate change’: How the government is rebranding in the age of Trump.” *Washington Post*.

<https://www.washingtonpost.com/news/energy-environment/wp/2017/05/26/just-dont-call-it-climate-change-rebranding-government-in-the-age-of-trump/> (last accessed 14 June 2019).

<sup>140</sup> <https://web.archive.org/web/20180308102339/http://www.noladefender.com/content/dont-call-me-resilient> (last accessed 20 June 2019); Kaika, M. 2017. ‘Don’t call me resilient again!’: the New Urban Agenda as immunology... or... what happens when communities refuse to be vaccinated with ‘smart cities’ and indicators. *Environment and Urbanization* 29 (1):89–102.

change” has dramatically decreased – between 2016 and 2018, it is worth asking if the Trump administration is censoring climate change by using more general terms to describe the unignorable changes in global climate and climate-related catastrophes. “Resilience” was indeed used as a direct substitute for “climate change” on several pages. As [EDGI has reported](#), a notable example of this was the renaming of EPA’s “Climate-Ready Water Utilities” program to the “Creating Resilient Water Utilities” program.<sup>141</sup>

To explore whether “sustainability” may also be a substitute for more specific discussions of mitigating climate change, we examined the pages where “sustainability” increased and “climate change” decreased. This does not by itself imply that “sustainability” directly replaced “climate change” but it can provide context about the use of the terms. As [EDGI previously reported](#), on EPA pages regarding its Smartway Program, “improving sustainability” was used as a direct replacement for “reducing climate impacts” and a carbon accounting effort was renamed from “Smartway Carbon Accounting and Reporting” to “Smartway Sustainability Accounting and Reporting.”

Overall at EPA, there was a 4.5% increase in the use of “sustainability.” This change was driven by minor changes (i.e. addition or removal of 1 mention per page), mostly related to the Smartway Program. There were a couple of pages that witnessed several additions of the term “sustainability” – these were often calendar-type pages listing events, which may indicate that “sustainability” is a more palatable term the agency and its partners can all entertain. For example, compare the [2016 version](#) and the [2018 version](#) of the World Calendar of Events for Sustainable Materials Management, Site Remediation, and Emergencies where several conferences included “sustainability” in their conference title or description.<sup>142</sup> On a different scale, the Water Research Small Systems monthly webinar series also saw a notable increase in seminars and meetings describing themselves with the term “sustainability” ([2016](#), [2018](#)).<sup>143</sup>

“Climate” itself can also be a substitute for “climate change” as seen in some of the examples presented in the “Modifying descriptions of science and scientists”

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<sup>141</sup> “Change of language and content for EPA’s Climate Ready Water Utilities program and web page.” EDGI. <https://envirodatagov.org/wp-content/uploads/2017/07/WM-CCR-9-EPA-Climate-Ready-Water-Utilities-170328.pdf> (last accessed 14 June 2019).

<sup>142</sup>

<http://web.archive.org/web/20160414070928/https://www.epa.gov/international-cooperation/world-calendar-events-sustainable-materials-management-site-remediation>;

<http://web.archive.org/web/20180616020358/https://www.epa.gov/international-cooperation/world-calendar-events-sustainable-materials-management-site-remediation> (last accessed 18 October 2018).

<sup>143</sup>

<http://web.archive.org/web/20160418164040/https://www.epa.gov/water-research/small-systems-monthly-webinar-series>;

<http://web.archive.org/web/20180418204446/https://www.epa.gov/water-research/small-systems-monthly-webinar-series> (last accessed 18 October 2018).

section above. This is also observed on the U.S. Forest Service website, where between [2016](#) and [2018](#) the “Office of Sustainability and Climate Change” was renamed to “Sustainability and Climate”; the office was also moved out of the Office of the Chief and into the National Forest System in the agency’s site map.<sup>144</sup> The substitution of “climate” for “climate change” was also observed on NOAA’s website, such as on the Earth Systems Research Laboratory Chemical Sciences Division’s Assessments page, where between [2016](#) and [2018](#), the explanation of assessments the division conducts was modified to replace “climate change” with “climate” (echoing the modification of how ESRL described scientists’ work – see above).<sup>145</sup> In DOE, the Atmospheric Radiation Measurement facility changed its tagline between [2016](#) and [2018](#) from “World’s premier ground-based observations facility advancing climate change research” to “The world’s premier ground-based observations facility advancing atmospheric and climate research,” and “climate” was removed from the page title.<sup>146</sup>

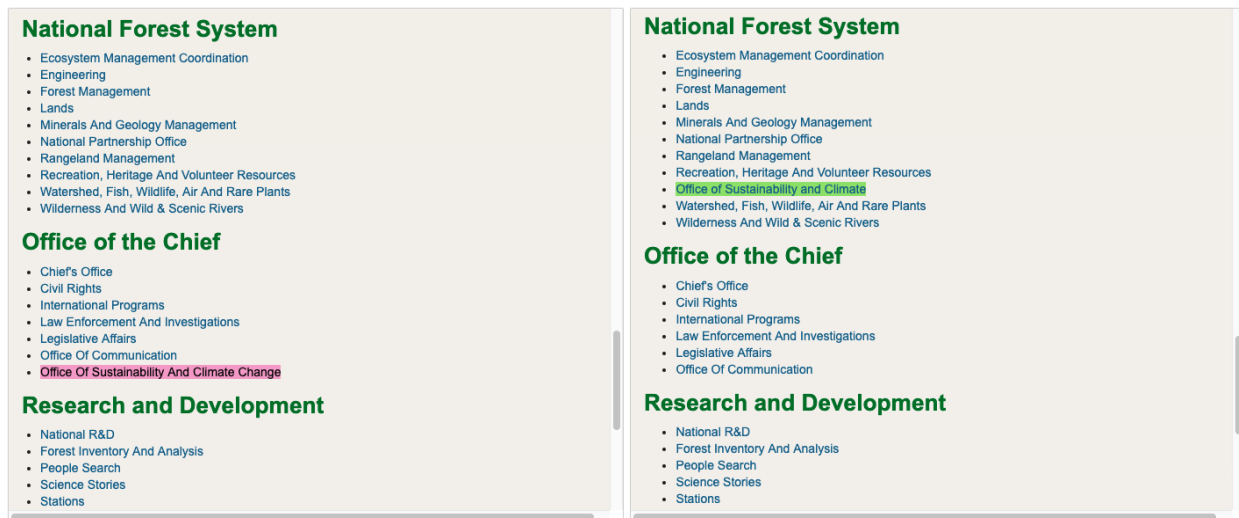


Figure 13. The USFS’s Office of Sustainability and Climate Change was renamed to Sustainability and Climate; the office was also moved out of the Office of the Chief and into the National Forest System in the agency’s site map.

The term “air quality” also has been used in place of more specific climate change terms. We looked at where the use of the term “emissions” decreased while the use of “air quality” increased. In some cases, such as on [EPA Smartway Program pages](#), “emissions” was replaced directly with the more vague “air quality.”<sup>147</sup> The term “emissions” was directly replaced by “air quality” throughout the EPA’s International

<sup>144</sup> <http://web.archive.org/web/20160611142620/http://www.fs.fed.us/sitemap>; <http://web.archive.org/web/20180628191200/https://www.fs.fed.us/sitemap> (last accessed 18 October 2018).

<sup>145</sup> <http://web.archive.org/web/20160223154943/http://www.esrl.noaa.gov/csd/assessments/>; <http://web.archive.org/web/20180615231740/https://www.esrl.noaa.gov/csd/assessments/> (last accessed 18 October 2018).

<sup>146</sup> <http://web.archive.org/web/20160624145923/http://www.arm.gov/>; <http://web.archive.org/web/20180611215041/https://www.arm.gov/> (last accessed 18 October 2018).

<sup>147</sup> “Changes to Language on the Environmental Protection Agency’s SmartWay Program Website.” EDGI. <https://envirodatagov.org/wp-content/uploads/2017/09/WM-CCR-18-EPA-Smartway-Program-170919.pdf> (last accessed 14 June 2019).

Cooperation site as well (see [our related report](#)).<sup>148</sup> On a page about EPA's partnerships with international organizations, discussion of efforts to mitigate methane emissions was altered to emphasize increasing air quality (2016, 2018).<sup>149</sup> The same change occurred on pages detailing EPA's collaborations with specific countries in Southeast Asia – like Vietnam (2016, 2018), Thailand (2016, 2018) and China (2016, 2018).<sup>150</sup> In addition to obfuscating mitigation issues by replacing “methane emissions” with “air quality,” the entire climate change section of the “EPA Collaboration with China” page was removed.

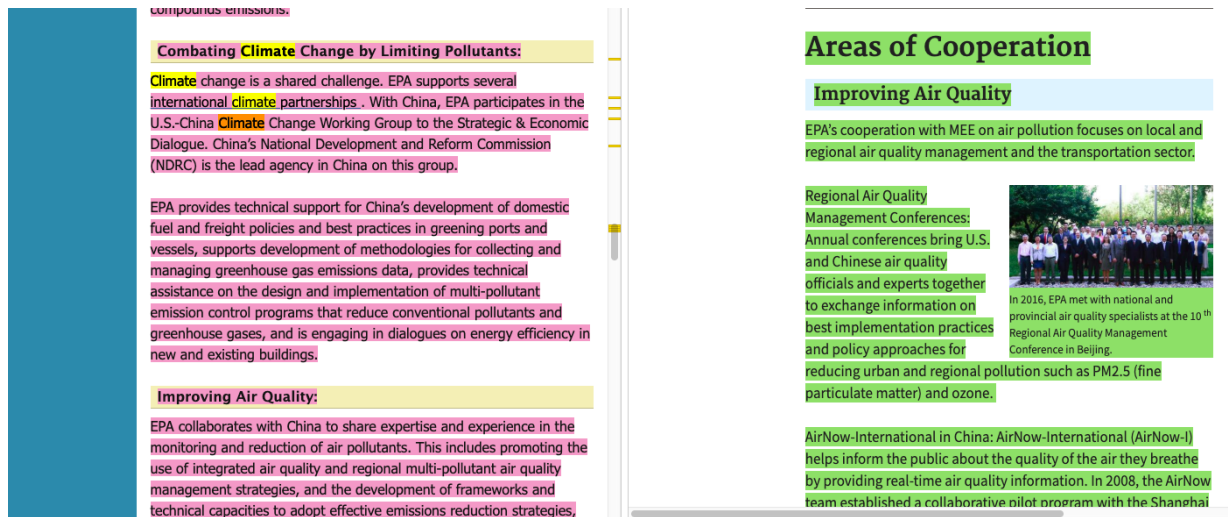


Figure 14. The entire climate change section of the “EPA Collaboration with China” page was removed.

<sup>148</sup> “Removal of EPA’s ‘International Priorities’ and ‘International Grants and Cooperative Agreements’ pages, as well as corresponding links, from the International Cooperation Website.” EDGI. <https://envirodatagov.org/wp-content/uploads/2018/04/AAR-7-EPA-International-Cooperation-180423.pdf> (last accessed 14 June 2019).

<sup>149</sup>

<http://web.archive.org/web/20160414064203/https://www.epa.gov/international-cooperation/partnering-international-organizations>;

<http://web.archive.org/web/20180616020220/https://www.epa.gov/international-cooperation/partnering-international-organizations> (last accessed 18 October 2018).

<sup>150</sup>

<http://web.archive.org/web/20160418083814/https://www.epa.gov/international-cooperation/epa-collaboration-vietnam>;

<http://web.archive.org/web/20180615003229/https://www.epa.gov/international-cooperation/epa-collaboration-vietnam>;

<http://web.archive.org/web/20160501093301/https://www.epa.gov/international-cooperation/epa-collaboration-thailand>;

<http://web.archive.org/web/20180614000620/https://www.epa.gov/international-cooperation/epa-collaboration-thailand>;

<http://web.archive.org/web/20160617234012/https://www.epa.gov/international-cooperation/epa-collaboration-china>;

<http://web.archive.org/web/20180615003224/https://www.epa.gov/international-cooperation/epa-collaboration-china> (last accessed 18 October 2018).

## What remains

We have documented substantial removals and alterations of climate change information on U.S. federal agency websites. These changes reveal an undermining of the infrastructure that translates climate science into public knowledge. However, despite pressure from groups like the Heartland Institute to further remove climate change information, the administration has not removed everything. Our research shows significant climate information resources remain available.

First, we found that the use of “climate change” remained unchanged between spring 2016 and spring 2018 on 691 pages in our sample. In addition, even when agencies did remove key climate change landing pages – like DOI’s [summer 2018 removal of doi.gov/climate](#) – other, “deeper level” pages within that agency may remain.<sup>151</sup> DOI itself is comprised of several bureaus, and some of them still spotlight climate change:

- BOEM – the office responsible for permitting offshoring oil drilling – [discusses its evaluation of climate change](#) and links to other federal resources on climate and even the IPCC<sup>152</sup>
- USGS’s [Climate Adaptation Science Centers](#)<sup>153</sup>
- NPS’s [“Understanding Climate Science”](#)<sup>154</sup>
- FWS’s [“Conservation in a Changing Climate”](#)<sup>155</sup>

Likewise, at the EPA, the [ARC-X Adaptation Resource Center](#) retains valuable regional and sector-specific information on both [expected climate impacts](#) and strategies for responding to climate change.<sup>156</sup> This site was launched in fall 2016 and is therefore not a part of our keyword counts.<sup>157</sup>

We have identified at least seven instances where EPA web managers updated pages so that links to removed content such as [epa.gov/climatechange](#) instead directly point to archived versions of that content. The ARC-X center provides an illustrative example. EPA removed [epa.gov/climate-impacts](#) in late April 2017, alongside [epa.gov/climatechange](#). As noted in the above paragraph, ARC-X provides

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<sup>151</sup> “DOI Further Restricts Access to Climate Change Web Pages.” EDGI.  
<https://envirodatagov.org/aar-11-doi-climate-190228/> (last accessed 14 June 2019).

<sup>152</sup> <https://www.boem.gov/Environmental-Stewardship/Environmental-Assessment/NEPA/procedure/climate/index.aspx> (last accessed 14 June 2019).

<sup>153</sup> <https://casc.usgs.gov/> (last accessed 14 June 2019).

<sup>154</sup> <https://www.nps.gov/subjects/climatechange/climatescience.htm> (last accessed 14 June 2019).

<sup>155</sup> <https://www.fws.gov/home/climatechange/index.html> (last accessed 14 June 2019).

<sup>156</sup> <https://www.epa.gov/arc-x> (last accessed 14 June 2019).

<sup>157</sup> <https://www.epa.gov/arc-x/implications-climate-change#regional> (last accessed 14 June 2019).

[a hub](#) for information on regional and sector-specific climate impacts.<sup>158</sup> The page [used to link](#) to descriptions of sector impacts by region that were hosted at [epa.gov/climate-impacts](#).<sup>159</sup> But after [epa.gov/climate-impacts](#) was removed, staff [modified the ARC-X page](#) to link directly to the January 19, 2017 snapshot versions of those descriptions.<sup>160</sup> What one part of the EPA did [in response to political pressure](#) (removing climate science information from [epa.gov/climate-impacts](#)), another part *undid* by ensuring that content was still utilized.<sup>161</sup>

While climate information such as that about sector-specific regional impacts is still available and utilized, though harder to access, it should be properly maintained. For instance, EPA's [Climate Indicators](#) site is still live.<sup>162</sup> Yet, many of the indicators have *not* been refreshed with the latest data. The [U.S. and Global Temperatures indicator](#) – certainly a key measure of global warming, and one that is measured every year – has not seen any page-specific updates since at least [January 2017](#) (the [April 2019 version](#) retains the same 2015 temperature data).<sup>163</sup> This is despite the fact that the NOAA data sources presented on the page [have themselves been updated](#).<sup>164</sup>

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<sup>158</sup> <https://www.epa.gov/arc-x/implications-climate-change#regional> (last accessed 14 June 2019).

<sup>159</sup> <https://web.archive.org/web/20170112093441/https://www.epa.gov/arc-x/implications-climate-change> (last accessed 18 October 2018).

<sup>160</sup> <https://web.archive.org/web/20190416124631/https://www.epa.gov/arc-x/implications-climate-change> (last accessed 18 October 2018); Web managers play a pivotal role in producing site content. Eschenfelder, K. R. 2004. Behind the Web site: An inside look at the production of Web-based textual government information. *Government Information Quarterly* 21 (3):337–358.

<sup>161</sup> “Newly Released Records Refer to Pruitt’s Personal Involvement in Removal of Climate Information from EPA Website.” Environmental Defense Fund. <https://www.edf.org/media/newly-released-records-refer-pruitts-personal-involvement-removal-climate-information-epa> (last accessed 12 June 2019).

<sup>162</sup> <http://epa.gov/climate-indicators> (last accessed 14 June 2019).

<sup>163</sup> <https://www.epa.gov/climate-indicators/climate-change-indicators-us-and-global-temperature> (last accessed 14 June 2019); <https://web.archive.org/web/20170112185019/https://www.epa.gov/climate-indicators/climate-change-indicators-us-and-global-temperature>;

<https://web.archive.org/web/20190401072858/https://www.epa.gov/climate-indicators/climate-change-indicators-us-and-global-temperature> (last accessed 18 October 2018).

<sup>164</sup> <https://www.ncdc.noaa.gov/temp-and-precip/> (last accessed 14 June 2019).

# CONCLUSIONS

Despite the growing climate crisis, the Trump administration has wasted over two years of potential crisis response by failing to communicate climate science and develop sound climate policy. It has both disinvested from, but also spent significant time and resources censoring, agency websites in order to obscure climate change science. As has been reported, this censorship is direct – ordered by political appointees – as well as indirect – taken on by program staff in order to accommodate the new political climate. The wholesale removal of [epa.gov/climatechange](https://www.epa.gov/climatechange) stands out as a blatant and substantial example of the administration’s efforts to undermine climate knowledge, but many smaller, targeted changes have occurred as well.

## Findings

We classified changes to the use of the key-term “climate change” in three ways:

- **Undermining climate change as a key component of existing challenges**
  - We observed agencies removing discussion of climate change from pages on crucial public policy issues. For instance, across both EPA and OSHA, increasing temperatures due to climate change were diminished as components of public health planning.
  - We also saw how the administration has downplayed the role of climate change in existing international commitments, in addition to withdrawing from the Paris Agreement. EPA’s International Cooperation pages were altered to remove discussion of climate change and DOE dropped mention of its work with other countries in the Americas on clean energy.
- **Changes in describing science and scientists**
  - We described several ways in which agencies began to use more generalized language to refer to climate change, its impacts, and mitigation and adaptation. The topic of some NOAA science was shifted from “climate change” to “climate” and NIOSH made the same move to present the connections between climate change and health. On EPA’s SmartWay program page, the much less specific term “sustainability” directly replaced “climate change,” while another EPA program began describing its scope as “resilience” in place of “climate.”
- **Restricting access to resources**



- The DOT's Climate Change Clearinghouse was a substantial, though poorly maintained, hub for resources on one of the most significant components of anthropogenic climate change. Its removal came in stages and is partial, but the current version of the clearinghouse does not present the climate crisis with complete information or urgency.

We can categorize the *mechanism* by which these changes occurred as both an “active” and “passive” undermining of web-facing science communication infrastructure:

- Most of the changes we describe in the report are a result of intentional modifications of web content and access. In addition, the January 2019 partial shutdown limited the delivery of government services, including information services.
- At the same time, the Trump administration has let many climate change-related web pages and their content go unmaintained. Arguably, this lack of maintenance stems at least in part from intentional decisions rather than sheer neglect. For instance, EPA appointees are [actively prohibiting staff](#) from refreshing the Climate Indicators page.<sup>165</sup>

Finally, despite the administration's effort to undermine climate knowledge infrastructures, we also found evidence of push-back and countervailing trends:

- Web managers are linking to Obama-era records of removed pages
- ARC-X, Climate Indicators, Climate.gov, Globalchange.gov are examples of climate information resources that are still available and accessible.

## Recommendations

**Restore** – We call for the restoration of critical information that has been removed from agency websites. This means two things: first, restoring content itself, especially on agencies' primary climate landing pages, including:

- [epa.gov/climatechange](https://epa.gov/climatechange)
- [doi.gov/climate](https://doi.gov/climate)
- [climate.dot.gov](https://climate.dot.gov).

Second, restoration also means ensuring that defunct URLs are redirected appropriately to their new locations. Consider [climate.dot.gov](https://climate.dot.gov) – not only should removed information related to transportation planning and public transit be restored, the [climate.dot.gov](https://climate.dot.gov) URL should redirect to where this content is now located.

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<sup>165</sup> “EPA: ‘It’s not a happy place.’” *E&E News*. <https://www.eenews.net/stories/1060107165> (last accessed 2 May 2019).

**Revamp** – It is not enough to restore content, since in many cases it was not up to date to begin with or, in the case of [epa.gov/climatechange](http://epa.gov/climatechange), it is by definition over two years old (since the site has been removed from the public domain for that long). In the case of what remains of DOT’s Climate Change Clearinghouse program, much of the material is *a decade* old. Climate change information must be refreshed and maintained throughout the federal web infrastructure, to facilitate public understanding of scientists’ consensus on climate change and agencies’ approaches to it. In addition, agencies should implement transparency features – potentially including change logs and notices of intended alterations – as well as archiving systems to ensure content is preserved and made accessible. DOI, for instance, has no web archive.

**Rethink** – Transparency has its limits. Even if federal agencies made their intentions to remove a page abundantly clear, they would still be able to proceed. This could result in a situation like we saw during the January 2019 government shutdown, in which data stored only on government servers became inaccessible. Instead, we must aim to build systems of distributed web archiving and version control, such that agency data and the webpages contextualizing it could not be unilaterally revoked from the public domain. To prevent future losses, web resources should be [held in common](#).<sup>166</sup> Finally, we must pursue environmental data justice in which information about and for marginalized groups – information such as the expected impacts of heat waves on the elderly and poor, non-English language material on regulatory actions, and public health resources for workers – actually and accessibly speaks to their concerns.

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<sup>166</sup> “Recap from Data Together Annual Meeting.” EDGI.  
<https://envirodatagov.org/recap-from-data-together-annual-meeting/> (last accessed 12 June 2019).

# APPENDIX A – Methodology

## Resources

- URLs surveyed and terms counted
  - Initial list:  
<https://drive.google.com/file/d/1EINHPTTVoOqCMs6ncMBqfZ9QZCGHIGfd/view?usp=sharing>
  - Broken down by domain and agency:  
<https://drive.google.com/file/d/1MN9TELVZZtbDvKAjppjUuNu2NMUD0f-F/view?usp=sharing>
  - Final list of 5,301 pages surveyed:  
<https://drive.google.com/file/d/1mfzIRbpt7OYBUmFJ0jMx8qufklfaMRbV/view?usp=sharing>
  - Terms:  
[https://drive.google.com/file/d/1Uy5INfyWs30WBCohn\\_hZbhoRVITkpAkA/view?usp=sharing](https://drive.google.com/file/d/1Uy5INfyWs30WBCohn_hZbhoRVITkpAkA/view?usp=sharing)
- EDGI Web Monitoring Team script for accessing Wayback Machine snapshots:
  - <https://github.com/edgi-govdata-archiving/web-monitoring-processing>
- Script for scraping snapshots and counting terms:
  - <https://github.com/ericnost/EDGI/blob/master/ctrl-f.py>
- Raw counts / results:
  - January-July 2016:  
[https://drive.google.com/file/d/1KZRbaAxPL4yy0oBMumbLQT\\_FgQ5Wwl8Y/view?usp=sharing](https://drive.google.com/file/d/1KZRbaAxPL4yy0oBMumbLQT_FgQ5Wwl8Y/view?usp=sharing)
  - January-July 2018:  
<https://drive.google.com/file/d/1ZKV-E6cdTyEnahSvbs2dDd4fUM0ZvVz9/view?usp=sharing>
- R script for parsing results:
  - <https://github.com/ericnost/EDGI/blob/master/termcount.R>
- Parsed results:
  - Full set of 5,301 pages
    - Statistics by agency:  
<https://drive.google.com/file/d/1ghwfBeitx87o-3d7r1BbW468axfAYhu6/view?usp=sharing>
    - Statistics by term:  
[https://drive.google.com/file/d/1gtAqLiiTGHutZweEF23myK\\_tSBEjjOs2/view?usp=sharing](https://drive.google.com/file/d/1gtAqLiiTGHutZweEF23myK_tSBEjjOs2/view?usp=sharing)
    - Debugging of results:

- 2016 – <https://drive.google.com/file/d/1smWszpAtoiZljCgGk6NfejBXptOgEXbU/view?usp=sharing>
  - 2018 – <https://drive.google.com/file/d/1pt1kA028DrvehzkUHBo6Sr5NMwd7fKb0/view?usp=sharing>
- Filtered set of 1,768 pages mentioning climate terms (for “related terms” analysis)
  - Statistics by agency: [https://drive.google.com/file/d/1KRGMwtVXktBiksWalgVu\\_XTRXV4S1u3z/view?usp=sharing](https://drive.google.com/file/d/1KRGMwtVXktBiksWalgVu_XTRXV4S1u3z/view?usp=sharing)
  - Statistics by term: <https://drive.google.com/file/d/135e-yawN8ESWtHf3arJtPpYgOw ESGovr/view?usp=sharing>

## Exclusions

- We removed irrelevant URLs that had been inadvertently picked up on crawls of federal pages, e.g. wxdude.com
- We eliminated URLs from EPA’s January 19, 2017 snapshot – and other agency archives – since if we counted these we might be “double counting” them (the archived snapshot and its live counterpart).
- We eliminated double listings of pages in our dataset – that is, multiple entries of the same URL – post hoc (see R script).
- We eliminated non-HTML URLs, such as those ending in .doc, .docx, .rtf, .pdf file extensions, because we currently cannot parse those file types and count terms on them.
- We excluded URLs with certain terms in them (e.g. “news,” “blog,” “espanol”). We aimed to avoid assessing pages that would be frequently updated, as this would make a comparison between 2016 and 2018 snapshots of a page difficult. It would be hard to know if changes were due to content removal or routine updates.

## Diagnostics

- We looked at top-level pages (e.g. usda.gov) for several primary environmental/resource agencies (USDA, FWS, DOI, DOE, NOAA, EPA) in order to understand their basic site structure. Our goal was to understand and account for elements like headers and footers that are repeated across many or even all pages in a domain. All but FWS used HTML-standard nav/header/footer tags for repeated navigation

elements (<nav>, <header>, <footer>). FWS used <div> ids, which we tried to account for specifically. However, site structure varied within FWS between timeframes (currently `div id = MainMenu` vs `div id =menuh`). So, we tried other means to address repeated elements.

- We conducted a kind of “ground truthing” assessment in order to evaluate the accuracy of our term counting script. Experienced EDGI Web Monitoring Team volunteers examined the HTML source code for a few pages (as well as their visible versions) and manually counted terms to ensure that our script counts met expectations.
- As part of the “ground truthing,” we examined the output for aberrant results. Specifically, we wanted to catch where the script was counting terms in elements repeated across an entire domain. In our R script, we produced a check to see the proportion of an agency’s pages with 1, 2, 3, etc. uses of each of our terms. For instance, we counted “climate change” once on 134 out of 1,492 EPA pages (2016). If we had counted “climate change” once on say 1,000 EPA pages, then we might have been counting the term in an element that is repeating across the EPA domain (like a navigation menu) rather than content unique to specific pages. This debugging led us to perform a recount of DOE pages, for instance.

## Limitations

There is invariably a context to each of the changes in term usage we document. Sometimes that context is straightforward: for example, the EPA removed all [epa.gov/climatechange](http://epa.gov/climatechange) pages. Sometimes we are able to flesh out the context: for example, the direct switch of “methane emissions” for “air quality” on EPA’s International Cooperation site. But sometimes we are not able to pick up on semantic meaning and other contextual clues. That is a tradeoff in this kind of large-scale analysis.

As extensive as our analysis is, we have captured only a sample of webpages. For instance, we are reporting on just 43 of the [epa.gov/climatechange](http://epa.gov/climatechange) pages that were removed in April 2017 by EPA and on none from [epa.gov/statelocalenergy](http://epa.gov/statelocalenergy). There are at least 8,000 more EPA URLs alone that we have been unable to examine here – so the *percent* change, or relative change, in the use of “climate change” and other terms may not hold, although the overall *magnitude* of a decrease will only grow.

The numbers we present above are *first best estimates* of the extent to which the Trump administration has censored discussion of climate change in all its dimensions – the fundamental science, impacts, implications for international

policy, and mitigation and adaptation strategies. It is worth repeating that some of the counts we have produced and the changes we see are insignificant; not every change in our data represents a deliberate effort to undermine science-policy-communication infrastructure. This is because of technical challenges in our approach (for example, changes occurring in a repeated in-page menu that we weren't able to account for) or, in some cases, the removal of one or two instances of a term might have reasonable copyediting justifications.

What we have presented here are some of the most compelling stories and trends that emerge from the data, where we can be sure there is significant change between 2016 and 2018 in the way federal environmental agencies have contextualized climate information.

## APPENDIX B – Agencies analyzed in this report

Acronym	Agency
BOEM	Bureau of Ocean Energy Management
CDC	Centers for Disease Control and Prevention
DOE	Department of Energy
DOI	Department of Interior
DOJ	Department of Justice
DOT	Department of Transportation
EIA	Energy Information Administration
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FWS	U.S. Fish and Wildlife Service
USFS	U.S. Forest Service
HHS	Department of Health and Human Services
NASA	National Aeronautics and Space Administration
NIH	National Institutes of Health
NOAA	National Oceanic and Atmospheric Administration
NPS	U.S. National Park Service
OSHA	Occupational Safety and Health Administration
USDA	Department of Agriculture
USGS	U.S. Geological Survey