Protecting Public Information is a Critical Component of Federal Scientific Integrity

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Respondent type: non-profit organization

Introduction

The Environmental Data and Governance Initiative (EDGI) Website Monitoring Team welcomes the opportunity to provide comment to help improve the effectiveness of federal scientific integrity policies to enhance public trust in science (Docket No: 2021-13640). EDGI is a multidisciplinary, cross-professional organization that has been documenting, analyzing, and contextualizing environmental governance actions since January 2017. EDGI's Website Monitoring Team works at the intersection of information and environmental policies, tracking changes to thousands of federal web pages related to climate, energy, and the environment in order to assess shifts in public access to or federal presentation of environmental science and policy information. Websites are the primary means by which the federal government communicates with the public,[1] and changes to website information directly affect public knowledge and participation in democratic processes. Our work helps inform and evaluate federal scientific integrity by examining the scientific information (and its regulatory context) federal websites make available to the public and their suitability for enhancing public understanding of and participation in environmental governance.

Stronger public information policies are necessary for stronger scientific integrity policies. This comment underscores that relationship by providing specific examples of federal website information management decisions during the Trump administration that were at odds with scientific integrity and undermined public trust. The website changes described here are just a few examples of more than 2,000 changes our team has documented over the last four and a half years, all of which are permissible under current information and scientific integrity policies.

This comment relays a series of recommendations to promote and protect the free flow of scientific information from the government to the public, and utilize websites as a vehicle for building public trust in the government by facilitating greater environmental, scientific, and civic literacy.

Relevant Findings: Disruptions to the Free Flow of Information

The majority of people accessing federal information do so through agency websites. While guidance exists for federal web infrastructure and the delivery of web services,[2] there is scant guidance regarding the content of web resources. This substantial gap in federal information policy leaves website content vulnerable to partisan political interference and breaches of scientific integrity and impedes the implementation of effective scientific integrity policies.

The Trump administration made dramatic and damaging changes to federal websites. In our study of more than 5,000 webpages across 13 federal agencies,[3] we calculated that the use of the term "climate change" decreased by 38% between 2016 and 2020. These and other changes suggesting the suppression of climate change information occurred more frequently on cabinet-level agency websites, and on higher-visibility webpages that the public would be more likely to encounter. Additionally, as much as 20% of the Environmental Protection Agency (EPA) website was removed from public access. Science communication is an integral part of scientific integrity, yet there are no repercussions for failing to communicate relevant scientific information. Within the current information and scientific integrity policy landscape, agencies have license to shape a scientific topic's narrative by simply removing the story altogether.

Many changes, such as the purging of the EPA Climate Change website, were broad information removals. In addition to these, we observed more targeted information manipulation. In a study examining significant changes to federal web resources specifically related to environmental regulations,[4] we found that a full half of those changes were information removals, and 80% of those information removals occurred just prior to or during active regulatory proceedings.

Many of these website changes included the deletion of scientific information critical to understanding the purpose or effectiveness of an environmental regulation. For example, the EPA redirected its entire Clean Power Plan (CPP) website to a single, short webpage, entitled "Energy Independence," about complying with former President Trump's executive order requesting a review of the CPP. Prior to this change, the CPP website housed scientific and technological information geared toward a range of audiences, including introductory information about the impacts of carbon dioxide on the atmosphere, as well as effective strategies for power grid executives to reduce carbon dioxide emissions. Redirecting the CPP website to the Energy Independence page stripped this scientific and technological information from the public five months before the EPA officially proposed, and opened public comment, to repeal the CPP.[5]

Another prime example of foundational scientific information being divorced from regulatory information occurred with the Waters of the United States rule. The EPA's Clean Water Rule (CWR) website had been a resource through which the public could build their understanding of a complex issue. Using text, graphics, and videos, the CWR website explained complex hydrology using basic terms. It also linked to a blog that summarized a study of results from more than 1,200 relevant peer-reviewed articles. This resource exemplified EPA's scientific integrity goals regarding science communication for agency decisions. However, in May 2017, the CWR website redirected to a website entitled the Waters of the United States (WOTUS) rule website. The new website described the two-step regulatory process to repeal and replace the Clean Water Rule, without any information regarding streams, wetlands, water quality, or hydrology.[6] This occurred more than two months before the EPA and Army Corps of Engineers officially proposed to repeal the CWR and invited public comment.

The WOTUS rule website later forwarded to the Navigable Waters Protection Rule (NWPR) website, which six months into the Biden administration now redirects to another WOTUS rule website with a similar structure and dearth of scientific information.[7] One key difference is that on this website, there are still resources explaining the current implementation of the WOTUS rule (the NWPR).

There are other indications that under the Biden administration, agencies are taking science communications and scientific integrity more seriously. Within the first two weeks of the Biden administration, the EPA issued an update on its website explaining that the Toxicity Assessment for PFBS was "compromised by political interference," removing the assessment in question and stating that the agency would review and potentially revise it. This is a step toward rebuilding public trust in federal science. It would be more transparent, however, if the PFBS toxicity assessment remained on the website with a banner stating the concerns about scientific integrity and details about the review process.[8] Retaining historical records is important for building public trust.

Recommendations

Strengthening the effectiveness of scientific integrity policies relies on improving information policies. This includes creating policies that require both scientific and policy context to be communicated to the public, enhancing federal science communications to help people build scientific literacy, creating an archival record of evolving scientific understanding and policy context, and adopting a culture and practice of information care and maintenance.

Building public trust in the federal government will require the authentic facilitation of both public participation in and oversight of government processes and decisions. We respond to three topics distinguished in this Request for Information:

> 1. The effectiveness of federal scientific integrity policies in promoting trust in federal science,
> 2. Effective policies and practices federal agencies could adopt to improve the communication of scientific and technological information, and
> 5. Other important aspects of scientific integrity and effective approaches to improving trust in federal science.

However, we assert that effectively promoting trust in federal science requires these improvements in science communication and careful maintenance of accessible active and archival web content (which we describe under prompt 5).

Promoting Trust in Federal Science

At the most basic level, trust requires honest and extensive information. To promote public trust in federal science, we recommend the Office of Science and Technology Policy require federal agencies to create meaningful resources that expand civic and scientific literacy by communicating clear and visible links between existing and potential policies and their scientific bases. Ensuring relationships between regulations and their scientific context is essential for encouraging informed participation in regulatory decisions. We recommend:

- The scientific basis for proposed and existing regulations should be described on agency websites, including scientific evidence regarding the potential or actual impacts of regulations or their repeal.
- On all webpages with scientific subject matter, information regarding relevant upcoming regulatory matters should be posted, such that the public is made aware of opportunities for civic engagement in those issues.
- During active regulatory proceedings, no related public resources, including relevant scientific subject matter, should be removed from live agency websites.
- The regulatory history of an issue, including legal challenges and decisions that affected the implementation or efficacy of a rule, should be described on agency websites.
- There should be a mechanism, beyond automated surveys, for the public to provide critical feedback about information on agency websites, including perceived misrepresentations of scientific or historical matters.

Improving Communication of Scientific and Technological Information

The federal government has the opportunity to utilize its web presence to facilitate informal adult education, improving our nation's science literacy, and in turn, supporting democracy. There are several positive examples of federal websites that have curated resources that do this, such as the National Climate Assessments. However, far too many web resources consist of a three-sentence snippet of the most basic information about a subject and a link to a several-hundred page compendium of scientific information, with no support to move between beginner and expert information. To be useful vehicles for informing the public and for building public trust, resources should facilitate gaining greater understanding of

an issue. This includes understanding the context of the research and of its applications. We recommend that:

- A hierarchy of information should govern web resources. Agencies should provide ladders of information geared toward audiences with a variety of background knowledge, including general facts and guidance on topical landing pages, intermediate-level synopses of research findings, and specific scientific evidence. Each level of information should be easily navigated to from the others.
- Primary topical and landing pages should explain the relevance of related pages. It is insufficient to list several links without explaining their relevance.
- Research should be situated and contextualized. Study objectives, limitations, analogues, data provenance, and implications for each of these should be explained.

Other Important Aspects of Scientific Integrity

An essential element of scientific integrity is the stewardship of resources and the ethos of maintaining both accurate, up to date information and records of its development and evolution. With respect to web resources, information should be updated to inform the public of evolving scientific understandings, emergency situations, or policy updates, but a historical record of web resources should be archived in an accessible manner. Archival records, especially accessible on the web, are critical for the public to gain an understanding of evolving information and to exercise democratic oversight over agencies that serve the public interest. We recommend:

- Specific notice requirements should be established and implemented for any resource removals.
- Written explanations should be required for the removal of any web resource, and those explanations should be stored in a publicly accessible, searchable database on each agency's website.
- Descriptions of webpage content changes should also be required and included in the searchable database alongside resource removal explanations.
- To notify website users of recent changes, any webpage that has been edited within the last month should have a banner indicating such, and the URL for

any resource that has been removed should remain live for at least a month with the explanation for its removal presented at that address.

Conclusions

Better information policies are critical to upholding scientific integrity, building public trust in the federal government, and engendering broader and more democratic participation in setting the priorities and actions of the federal government. We have detailed a series of recommendations that stem from more than four years of research on federal agency communications, and look forward to further discussion and adoption of these principles.

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