

High-level accessibility review - LAA (PLOS One platform)

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PLOS One platform

Summary

Top 3 problems for the PLOS One platform

This high-level assessment covers limited portions and functionality of the PLOS One platform. The assessment revealed issues with assistive technology compatibility, resulting in some users missing information required to understand content, states and operate functions. It is important to keep in mind that the findings represent a high-level assessment, and do not reflect the results of a Deque Comprehensive Web Assessment.

1. **Keyboard** – A variety of content throughout the site cannot be reached or operated via keyboard
2. **Focus Order** – There are areas across the site that the focus is out of order in such a way that it would make using the site difficult if not impossible for keyboard only users as well as screen reader users.
3. **Name, Role, Value** – Majority of the fields in the search as well as the filter checkboxes across the site are missing accessible names.

Review of Top Accessibility issues from previous evaluation

Many of the same type of issues still exist. Specifically there are still a large number of keyboard, focus order, focus visible, form label and image alt text issues. It appears that many of the heading order issues have been fixed with the exception of the initial landing page.

Accessibility findings

Project wide issues

The issues presented in this section were identified in multiple pages and are recorded here to avoid repetition. These are applicable to each screen. Due to particularities, similar issues are still reported on a page per page basis, where applicable.

Automated findings using Axe

Issues found through automated testing come from the Axe plugin, an open-source accessibility testing tool that is available for Chrome, Firefox and Edge. Details here: <https://www.deque.com/products/axe/>.

1. **SC 1.4.3 AA** – Contrast Minimum – Under the browse menu when expanded and a subject area is selected the unselected text becomes light gray (#a0a0a0) text on a dark gray (#606060) background which does not have at least 4.5:1 contrast ratio.

Additional manual findings using NVDA screen reader

1. **SC 2.1.1 A** – Keyboard – The “Publish”, “About”, and “Browse” menus can be opened with the keyboard but cannot be closed without navigating back to the menu item or choosing a menu item.
2. **SC 2.4.3 A** – Focus Order – When the “Browse” menu is expanded focus is not logical and moves to the search box rather than the items under the browse menu.
3. **SC 2.4.3 A** – Focus Order – When the “Browse” menu is expanded and then a subject is selected another list of subtopics opens. Focus should move to this list, but it remains on the subject selected and the user must tab through all subjects to reach the new list of subtopics.
4. **SC 2.4.7 AA** – Focus Visible – The Ad at the top of the page receives focus but does not have a visible focus indicator.
5. **SC 4.1.2 A** – Name, Role, Value – The “Browse” button expands and opens a submenu but is missing the expand/collapse state.
6. **SC 4.1.2 A** – Name, Role, Value – Under the “Browse” menu when a subject is selected the subject is highlighted but is missing a selected state to announce to screen readers.

1. Landing Page

Source: <https://journals.plos.org/plosone/>



Test case: Test initial interface/landing page to ensure menus, sub-menus, search box, images, icons, etc. are accessible.



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	<p>ENTOMOLOGY</p> <p>11/21/2024</p> <p>Perception, regulation, and effects on longevity of pollen fatty acids in the honey bee, <i>Apis mellifera</i></p> <p>Schleifer and colleagues show that increased fatty acid content leads to increased mortality and reduced consumption in honey bees, and that they can distinguish different types and quantities of fatty acids using their antennae.</p>
	<p>GEOCHEMISTRY</p> <p>11/11/2024</p> <p>Isotopic heterogeneity in U.S. Urban water supply systems reflects climatic, environmental, and sociodemographic factors: Implications for forensic identification</p> <p>Stantlis and colleagues show how local tap water isotope heterogeneity impacts the precision of forensic geolocation in a systematic and somewhat predictable way, with variation tending to be largest in cities across the western USA.</p>

Automated findings using Axe

1. **SC 1.4.3 AA – Contrast Minimum** – There are 34 instances (dates, image credit, text under collections and meet our staff, and in the pagination) of a light gray (#909090) text being used on a white (#ffffff) background which does not have at least 4.5:1 contrast ratio.
2. **SC 1.4.3 AA – Contrast Minimum** – The email signup form has an error message if the email isn't included which is red (#eb8f8f) text being used on a white (#ffffff) background which does not have at least 4.5:1 contrast ratio.
3. **SC 4.1.2 A – Name, Role, Value** – The email signup is in an iframe and the iframe does not have an accessible name.
4. **SC 4.1.2 A – Name, Role, Value** – The pagination links under Collections and Meet our staff do not have accessible names.
5. **SC 4.1.2 A – Name, Role, Value** – The two ads on the page are placed using iframes and the iframes do not have unique titles.

Additional manual findings using NVDA screen reader

1. **SC 2.4.4 A** – Link Purpose (In Context) – The “Apply Now” link text does not adequately describe the link purpose. Should include aria-label on the link that includes what is being applied for. For example: “Apply Now for Editorial Board”
2. **SC 2.4.6 AA** – Headings and Labels – The headings throughout the page are not in a logical order. Headings jump from Heading 3 to Heading 2. Items that should be headings such as the category headings (Research Title, Geochemistry, etc.) are not marked as headings.
3. **SC 2.4.7 AA** – Focus Visible – The Ad at the bottom of the page receives focus but does not have a visible focus indicator.

2. Search Results – metagenome

Source: <https://journals.plos.org/plosone/search?filterJournals=PLoSONE&q=metagenome>

Test case: From the initial landing page, conduct a search for: metagenome. Test search results page, including filters/refine search (such as selecting the journal filter “PLOS Computational Biology” and subject area filter “microbiology”) and sort by options.

The screenshot shows the search results for 'metagenome' on the PLOS ONE platform. The search bar contains 'metagenome' and a search icon. Below the search bar, it indicates '5,584 results for metagenome' and a 'Sort By: Relevance' dropdown menu. There is a 'SEARCH ALERT' button with a bell icon and a RSS icon. A 'Filters:' section shows 'PLOS ONE' selected and a 'Clear all filters' button. The results are organized into three columns: 'Journal', 'Subject Area', and a list of articles. The 'Journal' column has a checked box for 'PLOS ONE' and several unchecked boxes for other journals like 'PLOS Computational Biology (380)', 'PLOS Pathogens (356)', 'PLOS Neglected Tropical Diseases (261)', 'PLOS Biology (233)', and 'PLOS Genetics (187)'. The 'Subject Area' column has unchecked boxes for 'Biology and life sciences (5,527)' and 'Organisms (4,297)'. The article list includes 'The Metagenomic Telescope' by Balázs Szalkai et al., 'The Phylogenetic Diversity of Metagenomes' by Steven W. Kembel et al., and 'Exploration of Noncoding Sequences in Metagenomes' by Fabián Tobar-Tosse et al.

Automated findings using Axe

1. **SC 4.1.2 A** – Name, Role, Value – Search field in the dark bar is missing an accessible name.
2. **SC 4.1.2 A** – Name, Role, Value – Select boxes (sort by and number of pages) are missing accessible names.
3. **SC 4.1.2 A** – Name, Role, Value – All of the checkboxes under filters are missing an accessible name.
4. **SC 4.1.2 A** – Name, Role, Value – Clear filter buttons (x) do not have accessible names.
5. **SC 4.1.2 A** – Name, Role, Value – Search feed link next to the search alert does not have an accessible name.
6. **SC 4.1.2 A** – Name, Role, Value – Publication Date fields at the bottom of the filters do not have accessible name.

Additional manual findings using NVDA screen reader

1. **SC 1.4.11 AA** – The color of the current page number (#D7DF23) button in the pagination does not have at least 3:1 contrast with the other page number (#C0C0C0) buttons.
2. **SC 2.1.1 A** – Keyboard – The pages button in the pagination bar cannot be reached with the keyboard alone. They can only be activated with the mouse.
3. **SC 2.4.3 A** – Focus Order – When the “Filters” checkboxes are checked focus moves to the top of the filters list. Focus should remain on the checkbox that was selected.
4. **SC 4.1.2 A** – Name, Role, Value – Current page number button in the pagination bar is missing the current state.

5. **SC 4.1.2 A** – Name, Role, Value – The checkboxes are wrapped inside of a link creating nested interactive elements. The wrapping link should be removed and the link text changed to the checkbox label.

3. Search Results Landing Page

Source: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0059488>

Test case: Test individual search result landing page "Exploration of Noncoding Sequences in Metagenomes" & test actual document (PDF, video, etc.).

The screenshot shows the article landing page for "Exploration of Noncoding Sequences in Metagenomes" by Fabián Tobar-Tosse et al. The page includes a navigation menu with "Article" selected, a table of metrics (87 Save, 5 Citation, 6,232 View, 8 Share), and a "Download PDF" button. The abstract text is visible, and there is an advertisement for the "Tenth International Congress on Peer Review and Scientific Publication".

Automated findings using Axe

1. **SC 1.4.3 AA** – Contrast Minimum – The “Media Coverage” link text (#ffffff) does not have at least 4.5:1 contrast with the gray background (#777777).
2. **SC 1.4.3 AA** – Contrast Minimum – The “Advertisement” text (#bbbbbb) in the right column does not have at least 4.5:1 contrast with the white background (#ffffff).
3. **SC 4.1.2 A** – Name, Role, Value – The two adds on the page are iframed in and the iframes have the same title. Titles must be unique.

Additional manual findings using NVDA screen reader

1. **SC 1.1.1 A** – Non-text Content – All the images have alt text of “thumbnail” which is not descriptive. Also, all images are complex images, and a long description is not provided.
2. **SC 2.1.1 A** – Keyboard – The images modal that opens when a user clicks on an image cannot be reached using the keyboard alone.
3. **SC 2.4.3 A** – Focus Order) – Clicking on images opens an images modal but the focus does not move to the modal it remains on the page.
4. **SC 2.4.4 A** – Link Purpose (In Context) – There are multiple “Google Scholar” links that have the same text but go to different locations.
5. **SC 2.4.4 A** – Link Purpose (In Context) – The download links for images (PowerPoint Slide, Larger image, original image) are the same text for each image but go to different documents.

4. Actual Documents

Source: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0059488>

Test case: Test individual search result landing page "Exploration of Noncoding Sequences in Metagenomes" & test actual document (PDF, video, etc.).

OPEN ACCESS Freely available online

PLOS ONE

Exploration of Noncoding Sequences in Metagenomes

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Abstract

Environment-dependent genomic features have been defined for different metagenomes, whose genes and their associated processes are related to specific environments. Identification of ORFs and their functional categories are the most common methods for association between functional and environmental features. However, this analysis based on finding ORFs misses noncoding sequences and, therefore, some metagenome regulatory or structural information could be discarded. In this work we analyzed 23 whole metagenomes, including coding and noncoding sequences using the following sequence patterns: (G+C) content, Codon Usage (Cd), Trinucleotide Usage (Tn), and functional assignments for ORF prediction. Herein, we present evidence of a high proportion of noncoding sequences discarded in common similarity-based methods in metagenomics, and the kind of relevant information present in those. We found a high density of trinucleotide repeat sequences (TRS) in noncoding sequences, with a regulatory and adaptive function for metagenome communities. We present associations between trinucleotide values and gene function, where metagenome clustering correlate with microorganism adaptations and kinds of metagenomes. We propose here that noncoding sequences have relevant information to describe metagenomes that could be considered in a whole metagenome analysis in order to improve their organization, classification protocols, and their relation with the environment.

Citation: Tobar-Tosse F, Rodríguez AC, Vélez PE, Zambrano MM, Moreno PA (2013) Exploration of Noncoding Sequences in Metagenomes. PLoS ONE 8(3): e59488. doi:10.1371/journal.pone.0059488

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Automated findings using Axe

Not assessed due to insufficient time.

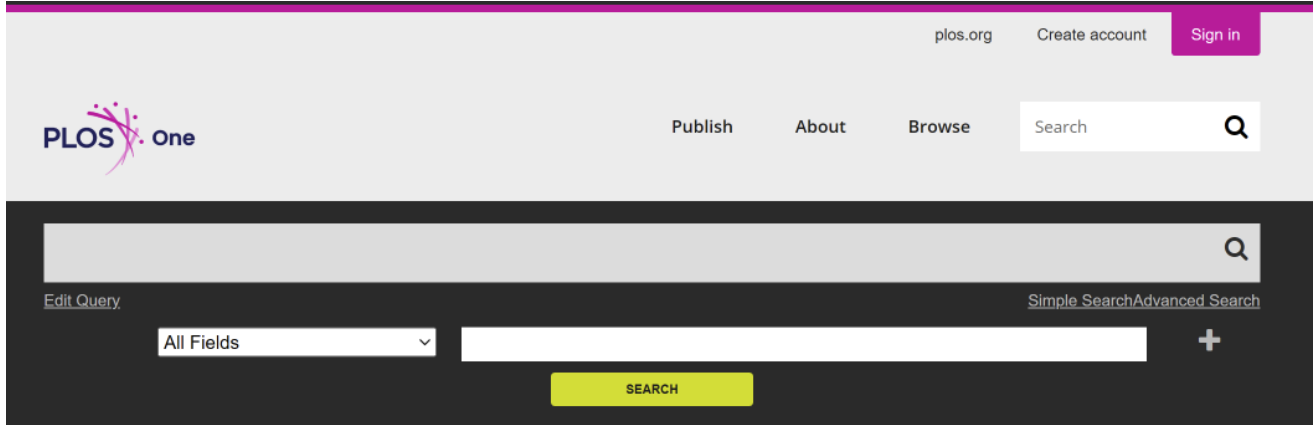
Additional manual findings using NVDA screen reader

Not assessed due to insufficient time.

5. Advanced Search

Source: <https://journals.plos.org/plosone/search>

Test case: Test advanced search page.



The screenshot shows the PLOS One website's search interface. At the top right, there are links for 'plos.org', 'Create account', and 'Sign in'. The PLOS One logo is on the left. In the center, there are links for 'Publish', 'About', and 'Browse'. A search bar is located on the right with a magnifying glass icon. Below this, there is a larger search area with a magnifying glass icon on the right. Underneath, there is a dropdown menu labeled 'All Fields' and a search input field. To the right of the input field is a '+' button. Below the input field is a yellow 'SEARCH' button. At the bottom left of the search area, there is a link for 'Edit Query'. At the bottom right, there are links for 'Simple Search' and 'Advanced Search'.

Please enter your search term above.

Automated findings using Axe

1. **SC 4.1.2 A** – Name, Role, Value – The clear search (x) button does not have discernible text.
2. **SC 4.1.2 A** – Name, Role, Value - The + button to add criteria does not have an accessible name.
3. **SC 4.1.2 A** – Name, Role, Value - The two search form fields under advanced search do not have labels associated with the fields.

Additional manual findings using NVDA screen reader

Not assessed due to insufficient time.