

High-level accessibility review – BTAA (ScienceDirect Platform)

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ScienceDirect Platform

Summary

Top 3 problems for the ScienceDirect Platform

This assessment covers portions of the ScienceDirect Platform. The assessment revealed moderate problems with screen reader compatibility, resulting in screen reader users rarely missing critical information needed to understand content and operate features.

1. **Contrast** – Primarily, the use of orange for text and hover elements is too low in contrast and would cause a low-vision user to miss this content.
2. **Non-Text Contrast** – The use of orange on informative / linked / active icons, as well as focus indicators does not provide sufficient contrast and would cause a low-vision user to miss this content.
3. **Programmatic Labels** – On some pages, there are a handful of buttons that all perform different tasks but share the same programmatic name without additional context to help a user identify the unique purpose.

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. **No Issues**

Additional manual findings using NVDA screen reader

1. **SC 1.4.3 AA** – Whenever blue links receive keyboard or mouse focus, the link foreground focus color #FF6C00 against a white background #FFFFFF results in 2.8:1 contrast where 4.5:1 is expected.
2. **SC 1.4.3 AA** – Whenever blue links receive keyboard or mouse focus, the link foreground focus color #FF6C00 against a grey background #F5F5F5 results in 2.6:1 contrast where 4.5:1 is expected.
3. **SC 1.4.11 AA** – When the ‘Science Direct help’ linked icon is focused, the primary icon color #FF6C00 against a white background #FFFFFF results in 2.8:1 contrast where 3:1 is expected.
4. **SC 2.5.3 A** – The ‘Feedback’ button does not include its visible label in its programmatic name, “Submit”.

1. ScienceDirect Home

Source: <https://www.sciencedirect.com/>

Test case: Test initial interface to ensure menus, search boxes, dropdowns, icons, links below search boxes, etc. are accessible.



The screenshot shows the ScienceDirect homepage. At the top left is the ScienceDirect logo. To the right are links for 'Journals & Books', a help icon, and 'Library Test' with a user profile icon. Below this is a search bar with the text 'Search for peer-reviewed journal articles and book chapters (including open access content)'. The search bar contains several input fields: 'Keywords', 'Author name', 'Journal/book title', 'Volume', 'Issue', and 'Pages', followed by a search icon and the text 'Advanced search'. Below the search bar is a large banner image of orange and red virus particles. Overlaid on the banner is a text box that reads: 'The most relevant research on Novel Coronavirus (SARS-CoV-2) and related viruses is available for free on ScienceDirect, and can be downloaded in a machine-readable format for text mining. Alternatively, visit the Elsevier Novel Coronavirus Information Center for general health information and advice.' Below this text is a button that says 'Visit the Information Center >'. At the bottom of the banner, there is a navigation menu with links for 'Physical Sciences and Engineering', 'Life Sciences', 'Health Sciences', and 'Social Sciences and Humanities'. In the bottom right corner of the banner area is a 'FEEDBACK' button with a speech bubble icon.

Explore scientific, technical, and medical research on ScienceDirect

Physical Sciences and Engineering Life Sciences Health Sciences Social Sciences and Humanities

FEEDBACK

Automated findings using Axe

1. No Issues

Additional manual findings using NVDA screen reader

1. **SC 2.4.4 A** – The 'Physical Sciences and Engineering', 'Life Sciences', 'Health Sciences' and 'Social Sciences and Humanities' linked text is present multiple times on the page but have different destinations. One set links elsewhere on the page, the second set links to a different area of the site.
2. **SC 1.4.11 AA** – When the 'Search' button icon is focused, the primary icon color #FFFFFF against an orange background #FF6C00 results in 2.8:1 contrast where 3:1 is expected.
3. **SC 1.4.3 AA** – When the 'Visit the Information Center' button text receives keyboard or mouse focus, the button foreground color #FFFFFF against the orange background #FF6C00 results in 2.8:1 contrast where 4.5:1 is expected.
4. **SC 1.4.1 A** – When blue links are embedded within a sentence/paragraph, they rely on color alone to be visually distinguished as a link without an additional visual indicator such as an underline.
5. **SC 3.3.2 A** – When the fields in the search function are filled in, the visual label disappears.

2. ScienceDirect Search Results

Source: <https://www.sciencedirect.com/search?q=ocean%20acidification>

Test case: From initial interface, enter a simple keyword search for: “ocean acidification”

Test search results page, including: 3 options at top (export, sort by/relevance and access type buttons); selecting checkboxes next to items, expanding abstract/other details, etc.

Test “Refine by” on left-hand side of results page (limit “Years” to 2011-2016 and “Access type” to Open access)

The screenshot shows the ScienceDirect search results page for the query "ocean acidification". At the top, there is a search bar with the text "ocean acidification" and a search icon. Below the search bar, there are options for "Advanced search" and "Download selected articles" and "Export". The results are sorted by "relevance | date". On the left side, there is a "Refine by" section with "Years" and "Article type" filters. The "Years" filter shows options for 2022 (1), 2021 (1,399), and 2020 (2,456). The "Article type" filter shows options for Review articles (1,738), Research articles (22,409), Encyclopedia (754), and Book chapters (2,147). The "Publication title" filter shows options for Geochemica et Cosmochimica Acta (1,790) and Research article. The main results list three items, each with a checkbox, a title, a journal name, a date, and authors. The first item is "Adaptation of a marine diatom to ocean acidification and warming reveals constraints and trade-offs" from Science of The Total Environment, 29 January 2021, by Jiahui Zhong, Yingyan Guo, ... Jianrong Xia. The second item is "Ocean acidification but not hypoxia alters the gonad performance in the thick shell mussel Mytilus coruscus" from Marine Pollution Bulletin, 29 March 2021, by Ting Wang, Hui Kong, ... Youji Wang. The third item is "Risks to the stability of coral reefs in the South China Sea: An integrated biomarker approach to assess the physiological responses of Trochus niloticus to ocean acidification and warming" from Science of The Total Environment, Available online 1 April 2021, by Tianyu Zhang, Yi Qu, ... Jianmin Zhao. Each item has "Abstract" and "Export" buttons.

Automated findings using Axe

1. **SC 4.1.2 A** – The ‘select all results’ checkbox is missing a programmatic and visible label.

Additional manual findings using NVDA screen reader

1. **SC 1.4.11 AA** – All the checkboxes, in their default state have a visible boundary #B9B9B9 that is low in contrast against an adjacent color #FFFFFF, resulting in 2:1 contrast where 3:1 is expected.
2. **SC 1.4.11 AA** – All the checkboxes, in their checked / semi-checked state do not have sufficient contrast to identify the state #FF6C00 against an adjacent color #FFFFFF, resulting in 2.8:1 contrast where 3:1 is expected.
3. **SC 1.4.11 AA** – For links and form elements that only use an orange outline or underline to indicate focus, the focus indicator primary color #FF6C00 against an adjacent color #FFFFFF or #F5F5F5 results in 2.8:1 or 2.6:1 contrast, where 3:1 is expected.
4. **SC 2.4.6 AA** – All ‘Abstract’ and ‘Export’ buttons share the same programmatic name and do not have their unique purpose programmatically identified.
5. **SC 2.4.6 AA** – All ‘Save to RefWorks’, ‘Export citation to RIS’, ‘Export citation to BibTex’, ‘Export citation to text’ buttons share the same programmatic name and do not have their unique purpose programmatically identified.
6. **SC 2.5.3 A** – All ‘Link to the publication’ links do not include their visible text in their programmatic name. E.g. “Science of The Total Environment” reads “Link to the publication”.
7. **SC 1.4.11 AA** – When the ‘Search’ button icon is focused, the primary icon color #FFFFFF against an orange background #FF6C00 results in 2.8:1 contrast where 3:1 is expected.

8. **SC 4.1.2 A** – All ‘Abstract’ and ‘Export’ buttons do not programmatically indicate their expanded/collapsed state.

3. ScienceDirect – Result Paper Full Details

Source: <https://www.sciencedirect.com/science/article/pii/S0078323415000925>

Test case: Select the third result for “Ocean acidification and marine microorganisms...” Is the page for this item accessible? Is the PDF accessible?

The screenshot shows the ScienceDirect article page for 'Ocean acidification and marine microorganisms: responses and consequences' by Surjit Das and Neelam Mangwani. The page includes a navigation menu on the left with sections like Outline, Summary, Keywords, and Figures. The main content area features the article title, authors, and a summary. On the right, there are sections for Recommended articles, Citing articles (28), and Article Metrics. The page is hosted by Elsevier and is available as an open access article.

Automated findings using Axe

1. **SC 1.4.3 AA** – Dark orange text #E9711C against a white #FFFFFF background results in 3.1:1 contrast where a 4.5:1 contrast ratio is expected.

Additional manual findings using NVDA screen reader

1. **SC 4.1.2 A** – The PDF Download document (1-s2.0-S0078323415000925-main.pdf) is not PDF/UA compliant.
2. **SC 2.4.6 AA** – Several buttons share the same programmatic name and do not have their unique purpose programmatically identified. E.g. “Purchase PDF”, “Download PDF”, “View details” etc.
3. **SC 4.1.2 A** – Some expand/collapse components do not programmatically indicate their expanded or collapsed state.
4. **SC 1.4.11 AA** – Several icon-based link and buttons are present on the page, when focused, the primary icon color #FF6C00 against a white background #FFFFFF results in 2.8:1 contrast where 3:1 is expected.

4. ScienceDirect Advanced Search

Source: <https://www.sciencedirect.com/search>

Test case: Test “Advanced Search” page for accessibility - no need to do an actual search/analyze results page since that’s covered above. Are the search boxes, tabs, fields, etc. accessible?

ScienceDirect Journals & Books ? Library Test

Advanced Search

[Search tips](#)

Find articles with these terms

In this journal or book title

Year(s)

Author(s)

Author affiliation

Volume(s)

Issue(s)

Page(s)

✓ Show all fields

Search

Feedback

Not completed due to insufficient time