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

<table>
<thead>
<tr>
<th>Project wide issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

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/](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.

![ScienceDirect home page](image)

**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?qs=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)

![ScienceDirect](https://www.sciencedirect.com)

29,811 results

**Refine by:**

- **Years**
  - 2022 (1)
  - 2021 (3,399)
  - 2020 (2,456)

**Article type**

- Review articles (3,738)
- Research articles (22,409)
- Encyclopedia (754)
- Book chapters (2,147)

**Publication title**

- Cienciamtica et Cosmochimica Acta (3,799)

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?

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?

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**Not completed due to insufficient time**