

High-level accessibility review – BTAA (ProQuest eBook Central - final version)

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High-level accessibility review – ProQuest eBook Central

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ProQuest eBook Central – accessibility mode “ON”

Summary (top 3 problems for ProQuest eBook Central)

This assessment covers the ProQuest eBook Central application, with accessibility mode turned on. There are significant issues in this application despite the accessibility mode, and most relate to the application not having been thoroughly tested for keyboard and screen reader compatibility. Another review of the application, with the accessibility mode turned off might follow in the near future. The top 3 issues found in this application were:

1. **Keyboard traps** – By far, the biggest problem observed in this application is related to the multiple keyboard traps that are found, for the most part on Download buttons. These traps are complete blockers for keyboard and screen reader users, who can no longer navigate through the application. Make sure no such keyboard traps are present on the site.
2. **Untagged PDF documents** – PDF documents in the application appear to be untagged, which is a big deal for accessibility, as screen reader users have no way to efficiently navigate through them. This is a serious matter, but also a very complicated one, as remediation of PDF documents means a lot of resources and efforts spent.
3. **Focus management** – Most pages show issues with focus not being managed properly. When an object is dismissed, or when a new object is displayed, the keyboard focus should always go to that object. This is true for all modal windows, but also for page or view changes. The focus should never randomly return to the top of the page unless it is the intended behavior due to regular page changes.

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 reported on a page per page basis, where applicable.

Automated findings using Axe

- **SC 4.1.1** – Most pages show ID attribute values that are not unique. ID values are duplicated.

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

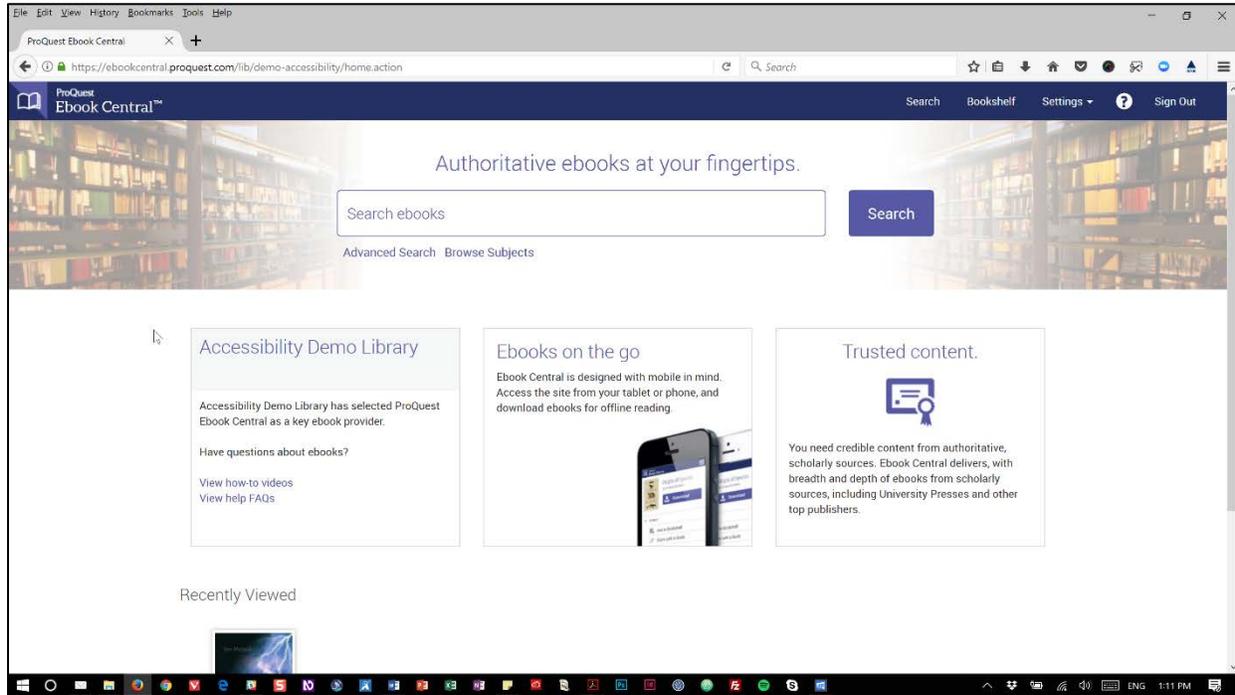
Additional manual findings using NVDA screen reader

- **SC 1.1.1** – The ProQuest logo in the footer has no alt text attribute value.
- **SC 1.3.1** – The links from the footer are not marked up using a list structure.
- **SC 2.1.1** – A control to turn accessibility mode on or off is available for keyboard users, but it is hidden off screen and does not become visible when it gets focus, so it's only conveyed to screen readers.
- **SC 2.4.7** – The keyboard focus ring is not always visible as one tabs through active elements.

1. ProQuest eBook Central landing page

Source: <https://ebookcentral.proquest.com/lib/demo-accessibility>

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



Automated findings using Axe

- **SC 1.1.1** – Linked image in the carousel has no alt text to describe what the link is about.
- **SC 2.4.4** – The previous and next arrow links in the carousel have no discernable text.

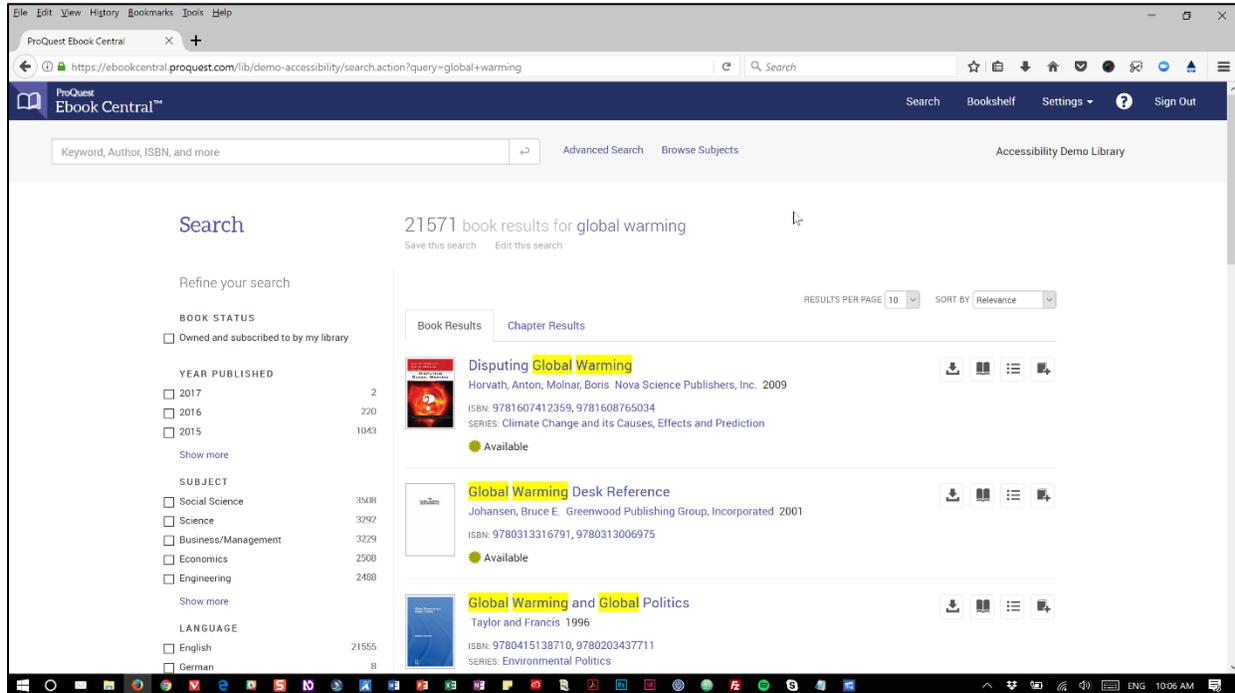
Additional manual findings using NVDA screen reader

- **SC 1.3.1** – Semantic structure of paragraph under Accessibility Demo Library is inappropriate.
- **SC 1.3.1** – The links under Accessibility Demo Library are not marked up using a list structure.
- **SC 2.1.1** – The previous and next arrow keys of the carousel disappear when tabbed to.
- **SC 2.4.7** – The keyboard focus ring is not always visible as one tabs through active elements, such as the Settings menu item and the carousel arrow keys.

2. ProQuest eBook Central Search results page

Source: <https://ebookcentral.proquest.com/lib/demo-accessibility/search.action?query=global+warming>

Test case: From initial interface, enter a simple search in the search 'ebooks searchbox' for: global warming and select "Search". Test search results page, including: 'sort by' and 'results per page' dropdowns (top right), icons next to books (full download, add to bookshelf, etc.). Test 'refine your search' options on left-hand side of search results page. Limit to 2016 (under year) and English (under Language).



Automated findings using Axe

- **SC 1.4.3** – Color contrast ratios used for the results at the top (light grey on a white background) are insufficient between the text and its background color.
- **SC 4.1.1** – ID attribute values must be unique. Some id values are duplicated in the page.
- **SC 4.1.2** – ARIA attributes not allowed in their current context. An aria-selected attribute, whether it is set to true or false, cannot be used on a list item.

Additional manual findings using NVDA screen reader

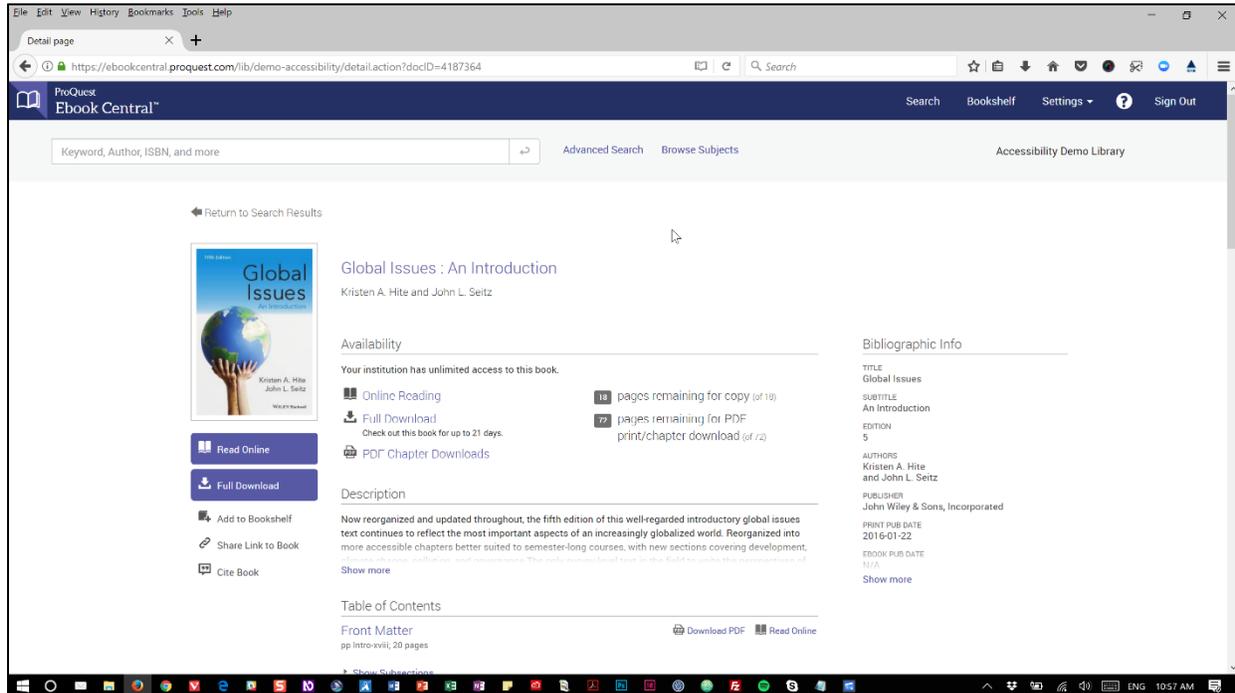
- **SC 1.3.1** – The links under Search results are not marked up using a list structure (Save this search, Edit this search).
- **SC 1.3.1** – The buttons provided on the right for each publication are not marked up using a list structure (Download, read online, Table of contents, Add to bookshelf).
- **SC 1.4.3** – The search bar at the top relies on placeholder text to provide additional instructions for the field, but this information is presented in light grey and does not meet minimum contrast ratios. Same applies to the placeholder value used in the form controls in the Bookshelf modal.

- **SC 2.1.2** – Once the Download modal is dismissed, the keyboard focus gets trapped on the Download button and can no longer be moved out of the control without either refreshing the page, or using the mouse to click out of it.
- **SC 2.1.2** – The Bookshelf modal also has a keyboard trap on the Add Item button. Once it is reached, it is no longer possible to tab out of that button.
- **SC 2.4.1** – A skip note link is available for keyboard users, but it is hidden off screen and does not become visible when it gets focus, so it's only conveyed to screen readers.
- **SC 2.4.3** – The tab implementation refreshes the entire page as it loads a different URL. This is not the expected behavior for a tabpanel interface. At least make sure that refreshing the page will send the keyboard focus to the right tab, not the very top of the screen.
- **SC 2.4.3** – Generally speaking, dismissing a modal send the focus back at the very top of the page, instead if retuning it to the initiating point that triggered the modal in the first place.
- **SC 2.4.3** – Generally speaking, triggering a change in the page (like a setting, a checkbox, filters) sends the focus back at the very top of the page, instead if retuning it to the initiating point that triggered the change in the first place.
- **SC 2.4.4** – The Show more links are not meaningful, even within their immediate context. For someone using a screen reader, it becomes very difficult to understand what “more” refers to.
- **SC 3.2.2** – Using the dropdown menus to sort results automatically triggers a page refresh, meaning only the first option in each dropdown is available for keyboard only users. Focus is also sent back to the top of the page as a result.
- **SC 3.3.2** – The search bar at the top relies on placeholder text to provide additional instructions for the field, but this information is not persistent, and disappears when text is typed in.
- **SC 4.1.2** – The number of publications pertinent to each checkbox is not conveyed to screen reader users, as they're tabbing through the list of checkboxes. This information is only available out of context.
- **SC 4.1.2** – The search bar at the top relies on placeholder text to provide additional instructions for the field, but this information is not reliably conveyed to screen reader users.
- **SC 4.1.2** – In the modal window for Download, the second option in the radio buttons is not conveyed at all to screen reader users. Only the first one is read out as buttons are selected.

3. ProQuest eBook Central Document Details page

Source: <https://ebookcentral.proquest.com/lib/demo-accessibility/detail.action?docID=4187364>

Test case: Select an individual book/result by clicking on one record from the search results page (perhaps Global Issues: An Introduction)? Please test: Ebook landing page (that has cover, reading options below cover, availability, table of contents, etc. on it).



Automated findings using Axe

- **SC 1.4.4** – Page uses the user-scalable=no parameter in the meta name="viewport" element that disables text scaling and zooming which is essential to users with low vision.
- **SC 4.1.1** – ID attribute values must be unique. Multiple id values are duplicated in the page.
- **SC 4.1.2** – There is a typo in the aria-describedby attribute on the main H1 of the page.

Additional manual findings using NVDA screen reader

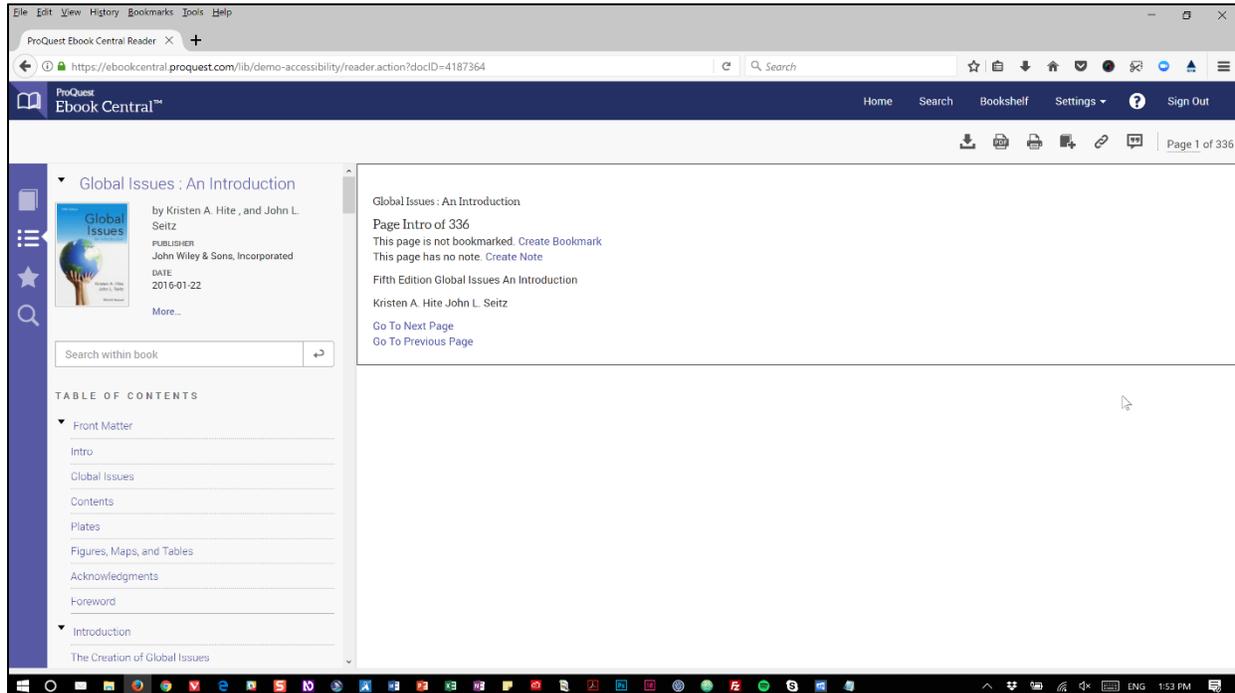
- **SC 1.3.1** – Multiple headings in the page are marked up as H1 tags. Providing a more meaningful heading structure would be useful.
- **SC 1.3.1** – The information under Bibliographic Info is visually structured with headings, but the content is only marked up as DIVs. Provide each section with its own heading.
- **SC 2.1.2** – The Full Download and Add to Bookshelf buttons on the left cause keyboard traps. Once either is reached, it is no longer possible to tab out of those buttons.
- **SC 2.1.2** – The Download PDF links under Table of Contents cause keyboard traps. Once any is reached, it is no longer possible to tab out of the links.

- **SC 2.4.4** – The Show/hide subsections links are not meaningful, even within their immediate context. For someone using a screen reader, it becomes very difficult to understand which subsection each link refers to.
- **SC 4.1.2** – Information structured under the Availability level 1 heading is marked up with a role of toolbar, while it does not fill in that purpose. Remove to avoid forcing screen readers into forms mode and any potential confusion.
- **SC 4.1.2** – The Show more / show less links (in the main content and in the right column) do not announce the state of their respective accordions to screen reader users. They need aria-expanded attributes to convey this information.
- **SC 4.1.2** – The Show/hide subsections links do not announce the state of the accordion to screen reader users. It needs an aria-expanded attribute to convey this information.
- **SC 4.1.2** – The Download PDF modal forces the screen reader in forms mode, making it impossible to navigate around the modal's content with arrow keys. Wrap the parent container of the modal with a role set to document to work around this issue.

4. ProQuest eBook Central Online Reading page

Source: <https://ebookcentral.proquest.com/lib/demo-accessibility/reader.action?docID=4187364>

Test case: Read online option – how accessible is this both in and out of “accessibility mode”. PDF chapter download – how accessible is this PDF? Full download option – is the pop-up that comes up accessible? Does the file read well in Adobe Digital Editions?



Automated findings using Axe

- **SC 1.1.1** – The image that is part of the logo at the top does not have an alt attribute or equivalent markup.
- **SC 1.4.4** – Page uses the user-scalable=no parameter in the meta name="viewport" element that disables text scaling and zooming which is essential to users with low vision.
- **SC 4.1.1** – ID attribute values must be unique. Multiple id values are duplicated in the page.
- **SC 4.1.2** – ARIA attribute values provided for the aria-controls attributes is not valid.

Additional manual findings using NVDA screen reader

- **SC 1.3.1** – The heading structure of the page is confusing for someone who can't see the screen. Visual affordances given to the title heading is not reflected in the heading markup hierarchy.
- **SC 1.3.1** – Toolbar modals have form controls that don't have programmatically associated labels (Chapter download, Print to PDF).
- **SC 1.4.3** – The search bar on the left relies on placeholder text to provide additional instructions for the field, but this information is presented in light grey and does not meet minimum contrast ratios.
- **SC 2.1.1** – The arrow links displayed under the Table of Contents are clickable, but cannot be operated using only a keyboard.
- **SC 2.1.1** – There is no obvious way for a screen reader user to go back to the Table of Contents once focus has been moved to the main content after having selected a section of content.

- **SC 2.4.3** – The Go to next or previous page links should send the focus to the top of the section, not the first active element shown in that section.
- **SC 2.4.3** – The modals displayed from the toolbar at the top right do not capture keyboard focus while visible. Users can tab back into the browser window (the URL bar, the tabs, etc.)
- **SC 2.4.4** – The More link is not meaningful, even within its immediate context. For someone using a screen reader, it becomes very difficult to understand what this link refers to.
- **SC 2.4.7** – The toolbar at the top right shows no visible focus ring when tabbing through items with a keyboard.
- **SC 3.2.1** – The page seems to randomly reload at times, forcing keyboard and screen reader users back at the top of the page. They then need to make their way back into the content.
- **SC 3.3.2** – The search bar on the left relies on placeholder text to provide additional instructions for the field, but this information is not persistent, and disappears when text is typed in.
- **SC 4.1.2** – The search bar on the left relies on placeholder text to provide additional instructions for the field, but this information is not reliably conveyed to screen reader users.

Observations about the PDF document (in Adobe Acrobat)

The PDF document downloaded as the chapter document is not tagged. While it is a full text document, and not a series of images of text, the accessibility of the document will be very limited, as no semantic structure is conveyed to users of assistive technologies. Images shown in the document are not tagged either. The most basic expectations for PDF accessibility are not met in such documents.

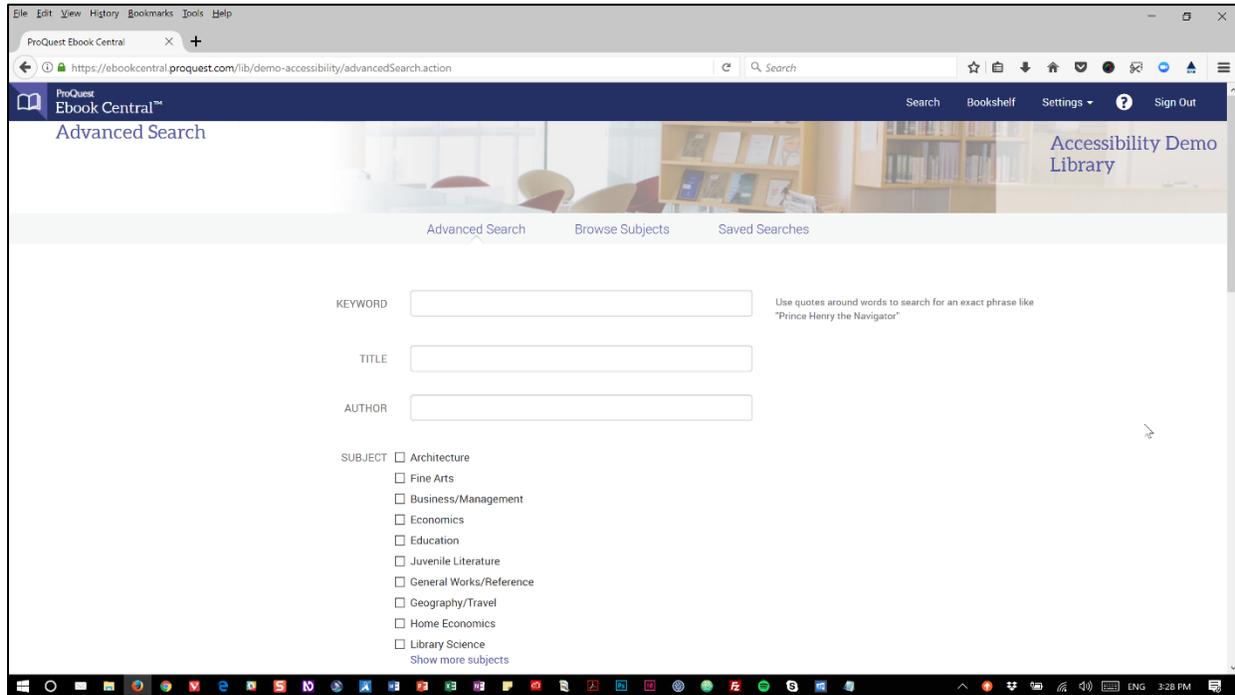
Observations about the PDF and EPUB documents (in Adobe Digital Editions)

The PDF and EPUB documents not being tagged, similar issues are found using this software. The documents cannot be considered accessible, and would not to be either remediated for accessibility.

5. ProQuest eBook Central Advanced search page

Source: <https://ebookcentral.proquest.com/lib/demo-accessibility/advancedSearch.action>

Test case: Test “Advanced Search” page for accessibility (link found under search box) - no need to do an actual search/analyze results page since that’s covered above.



Automated findings using Axe

- **SC 1.3.1** – There’s an empty UL element with a menu role assigned to it on the page.
- **SC 1.3.1** – Form controls are not programmatically associated with their labels.
- **SC 4.1.1** – ID attribute values must be unique. One id value is duplicated in the page.

Additional manual findings using NVDA screen reader

- **SC 1.3.1** – The main menu at the top is not structured using list markup.
- **SC 1.3.1** – Form groupings are not programmatically associated with their common labels.
- **SC 4.1.2** – Instructions provided for some of the form controls is not programmatically associated with their respective labels.
- **SC 4.1.2** – The Show more links are not announcing their states when triggered (collapsed or expanded).

ProQuest eBook Central – accessibility mode “OFF”

Summary (top 3 problems for ProQuest eBook Central)

This second assessment of the ProQuest eBook Central application focused on differences observed with the accessibility mode turned off. Every issue that were observed with accessibility mode turned on are still present with accessibility mode turned off, and no noticeable differences were observed in terms of how much more accessible (or inaccessible) this mode was compared to the previous one.

After having made sure that the mode was indeed turned off, we ran through the entire application, and observed the same issues still applied. There were minor differences at times, and those have been highlighted throughout the document. This leaves us wondering what exactly was added to the code base to make the experience more accessible to screen reader users with accessibility mode turned on. The top issues observed remain the same.

4. **Keyboard traps** – By far, the biggest problem observed in this application is related to the multiple keyboard traps that are found, for the most part on Download buttons. These traps are complete blockers for keyboard and screen reader users, who can no longer navigate through the application. Make sure no such keyboard traps are present on the site.
5. **Untagged PDF documents** – PDF documents in the application appear to be untagged, which is a big deal for accessibility, as screen reader users have no way to efficiently navigate through them. This is a serious matter, but also a very complicated one, as remediation of PDF documents means a lot of resources and efforts spent.
6. **Focus management** – Most pages show issues with focus not being managed properly. When an object is dismissed, or when a new object is displayed, the keyboard focus should always go to that object. This is true for all modal windows, but also for page or view changes. The focus should never randomly return to the top of the page unless it is the intended behavior due to regular page changes.

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 reported on a page per page basis, where applicable.

Automated findings using Axe

- **SC 4.1.1** – Most pages show ID attribute values that are not unique. ID values are duplicated.

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

Additional manual findings using NVDA screen reader

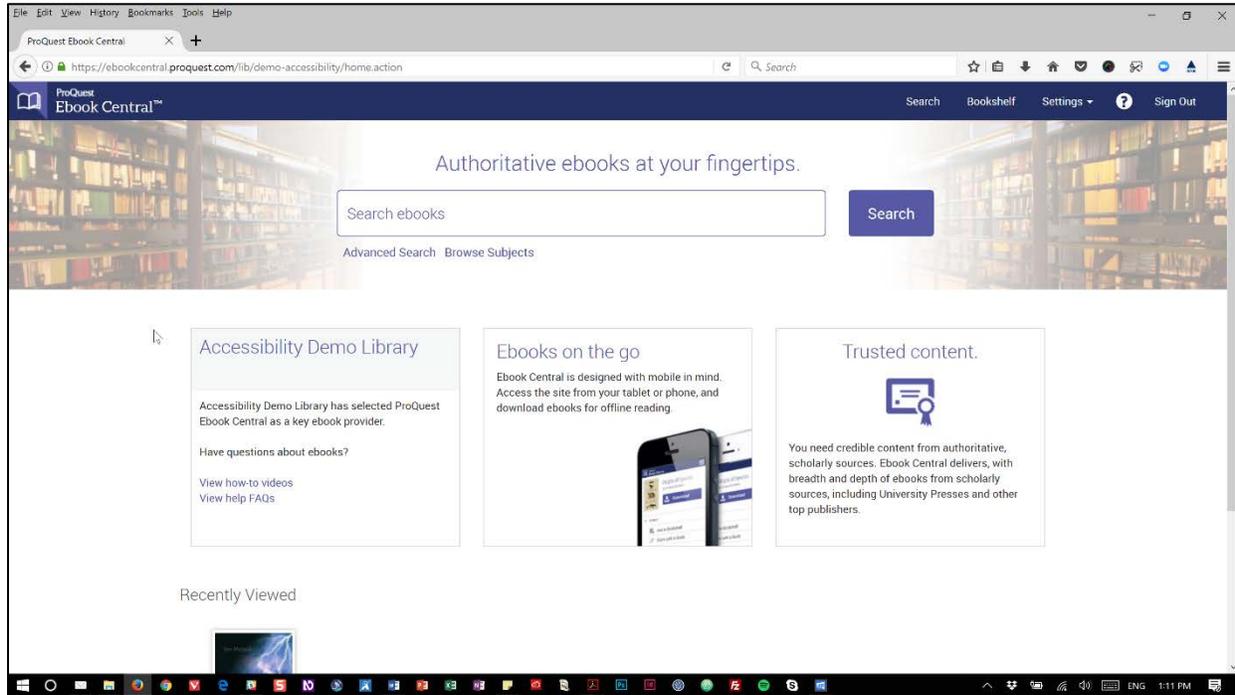
- **SC 1.1.1** – The ProQuest logo in the footer has no alt text attribute value.
- **SC 1.3.1** – The links from the footer are not marked up using a list structure.

- **SC 2.1.1** – A control to turn accessibility mode on or off is available for keyboard users, but it is hidden off screen and does not become visible when it gets focus, so it's only conveyed to screen readers.
- **SC 2.4.7** – The keyboard focus ring is not always visible as one tabs through active elements.

1. ProQuest eBook Central landing page

Source: <https://ebookcentral.proquest.com/lib/demo-accessibility>

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



Automated findings using Axe

- **SC 1.1.1** – Linked image in the carousel has no alt text to describe what the link is about.
- **SC 2.4.4** – The previous and next arrow links in the carousel have no discernable text.

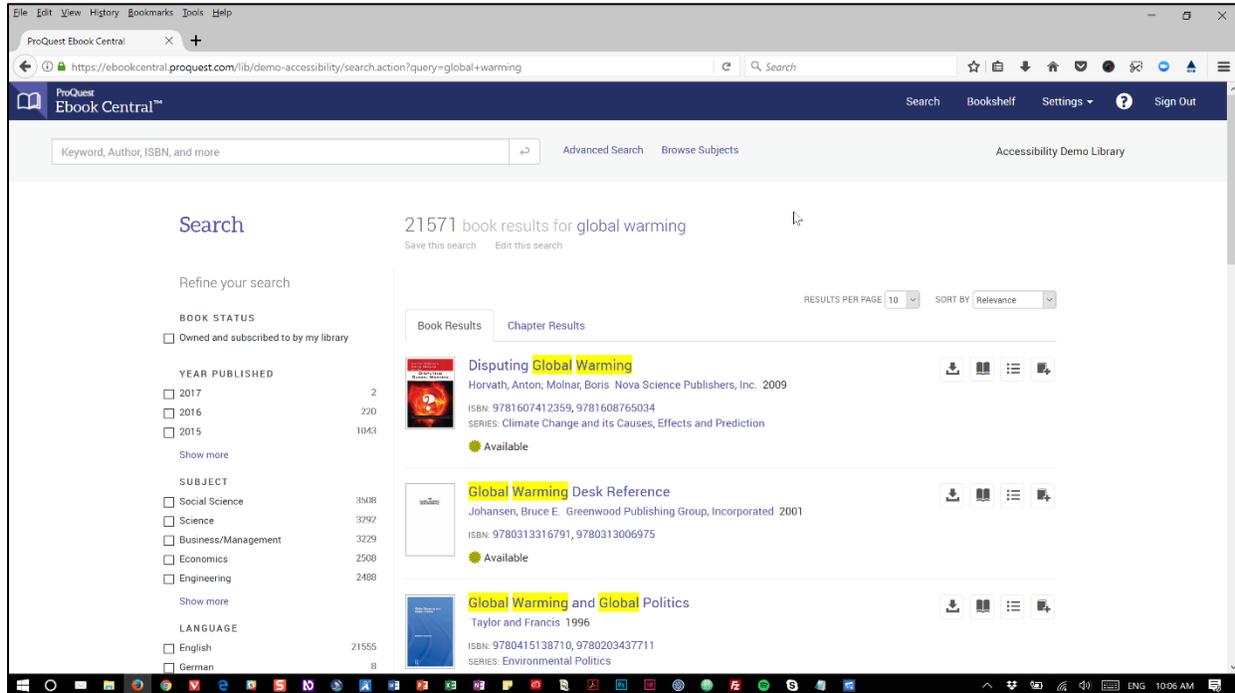
Additional manual findings using NVDA screen reader

- **SC 1.3.1** – Semantic structure of paragraph under Accessibility Demo Library is inappropriate.
- **SC 1.3.1** – The links under Accessibility Demo Library are not marked up using a list structure.
- **SC 2.1.1** – The previous and next arrow keys of the carousel disappear when tabbed to.
- **SC 2.4.7** – The keyboard focus ring is not always visible as one tabs through active elements, such as the Settings menu item and the carousel arrow keys.

2. ProQuest eBook Central Search results page

Source: <https://ebookcentral.proquest.com/lib/demo-accessibility/search.action?query=global+warming>

Test case: From initial interface, enter a simple search in the search 'ebooks searchbox' for: global warming and select "Search". Test search results page, including: 'sort by' and 'results per page' dropdowns (top right), icons next to books (full download, add to bookshelf, etc.). Test 'refine your search' options on left-hand side of search results page. Limit to 2016 (under year) and English (under Language).



Automated findings using Axe

- **SC 1.4.3** – Color contrast ratios used for the results at the top (light grey on a white background) are insufficient between the text and its background color.
- **SC 4.1.1** – ID attribute values must be unique. Some id values are duplicated in the page.
- **SC 4.1.2** – ARIA attributes not allowed in their current context. An aria-selected attribute, whether it is set to true or false, cannot be used on a list item.

Additional manual findings using NVDA screen reader

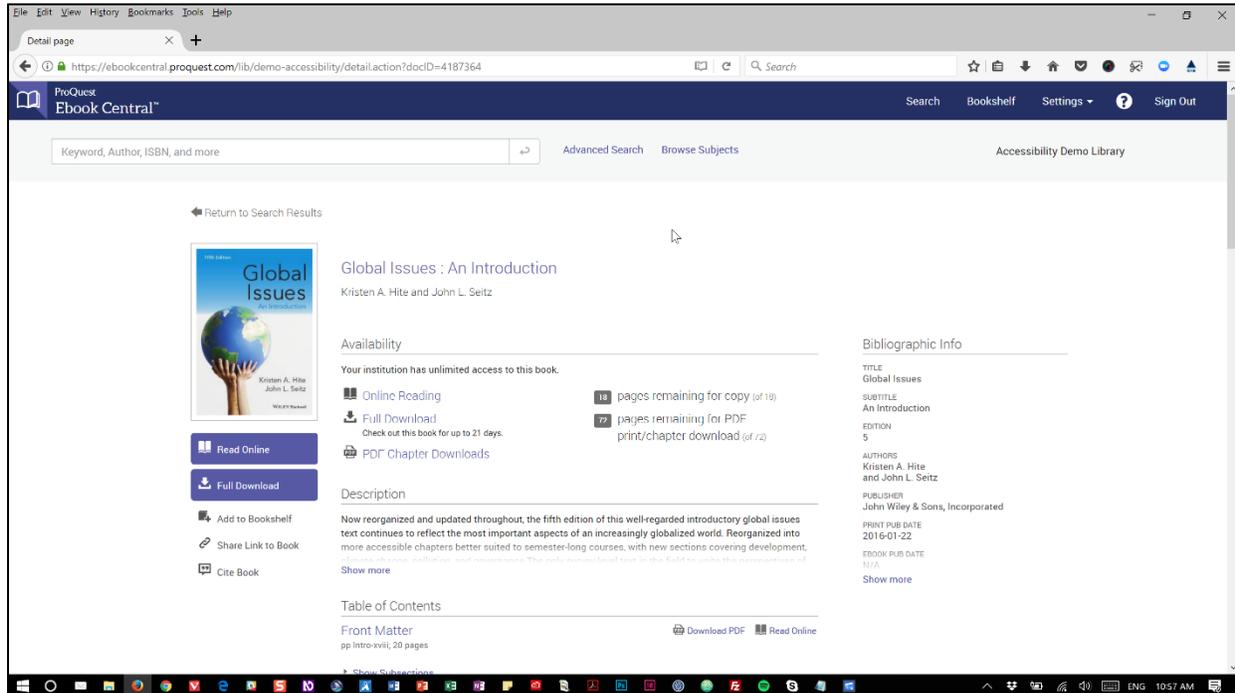
- **SC 1.3.1** – The links under Search results are not marked up using a list structure (Save this search, Edit this search).
- **SC 1.3.1** – The buttons provided on the right for each publication are not marked up using a list structure (Download, read online, Table of contents, Add to bookshelf).
- **SC 1.4.3** – The search bar at the top relies on placeholder text to provide additional instructions for the field, but this information is presented in light grey and does not meet minimum contrast ratios. Same applies to the placeholder value used in the form controls in the Bookshelf modal.

- **SC 2.1.2** – Once the Download modal is dismissed, the keyboard focus gets trapped on the Download button and can no longer be moved out of the control without either refreshing the page, or using the mouse to click out of it.
- **SC 2.1.2** – The Bookshelf modal also has a keyboard trap on the Add Item button. Once it is reached, it is no longer possible to tab out of that button.
- **SC 2.4.1** – A skip note link is available for keyboard users, but it is hidden off screen and does not become visible when it gets focus, so it's only conveyed to screen readers.
- **(new) SC 2.4.3** – When closing the tab for the accessible mode, the keyboard focus is then sent to the content tabs without the screen reader user knowing. This is confusing and unexpected, making it that much harder for non-sighted users to determine where they are in the page.
- **SC 2.4.3** – The tab implementation refreshes the entire page as it loads a different URL. This is not the expected behavior for a tabpanel interface. At least make sure that refreshing the page will send the keyboard focus to the right tab, not the very top of the screen.
- **SC 2.4.3** – Generally speaking, dismissing a modal send the focus back at the very top of the page, instead if retuning it to the initiating point that triggered the modal in the first place.
- **SC 2.4.3** – Generally speaking, triggering a change in the page (like a setting, a checkbox, filters) sends the focus back at the very top of the page, instead if retuning it to the initiating point that triggered the change in the first place.
- **SC 2.4.4** – The Show more links are not meaningful, even within their immediate context. For someone using a screen reader, it becomes very difficult to understand what “more” refers to.
- **SC 3.2.2** – Using the dropdown menus to sort results automatically triggers a page refresh, meaning only the first option in each dropdown is available for keyboard only users. Focus is also sent back to the top of the page as a result.
- **SC 3.3.2** – The search bar at the top relies on placeholder text to provide additional instructions for the field, but this information is not persistent, and disappears when text is typed in.
- **SC 4.1.2** – The number of publications pertinent to each checkbox is not conveyed to screen reader users, as they're tabbing through the list of checkboxes. This information is only available out of context.
- **SC 4.1.2** – The search bar at the top relies on placeholder text to provide additional instructions for the field, but this information is not reliably conveyed to screen reader users.
- **SC 4.1.2** – In the modal window for Download, the second option in the radio buttons is not conveyed at all to screen reader users. Only the first one is read out as buttons are selected.

3. ProQuest eBook Central Document Details page

Source: <https://ebookcentral.proquest.com/lib/demo-accessibility/detail.action?docID=4187364>

Test case: Select an individual book/result by clicking on one record from the search results page (perhaps Global Issues: An Introduction)? Please test: Ebook landing page (that has cover, reading options below cover, availability, table of contents, etc. on it).



Automated findings using Axe

- **SC 1.4.4** – Page uses the user-scalable=no parameter in the meta name="viewport" element that disables text scaling and zooming which is essential to users with low vision.
- **SC 4.1.1** – ID attribute values must be unique. Multiple id values are duplicated in the page.
- **SC 4.1.2** – There is a typo in the aria-describedby attribute on the main H1 of the page.

Additional manual findings using NVDA screen reader

- **SC 1.3.1** – Multiple headings in the page are marked up as H1 tags. Providing a more meaningful heading structure would be useful.
- **SC 1.3.1** – The information under Bibliographic Info is visually structured with headings, but the content is only marked up as DIVs. Provide each section with its own heading.
- **SC 2.1.2** – The Full Download and Add to Bookshelf buttons on the left cause keyboard traps. Once either is reached, it is no longer possible to tab out of those buttons.
- **SC 2.1.2** – The Download PDF links under Table of Contents cause keyboard traps. Once any is reached, it is no longer possible to tab out of the links.

- **SC 2.4.4** – The Show/hide subsections links are not meaningful, even within their immediate context. For someone using a screen reader, it becomes very difficult to understand which subsection each link refers to.
- **SC 4.1.2** – Information structured under the Availability level 1 heading is marked up with a role of toolbar, while it does not fill in that purpose. Remove to avoid forcing screen readers into forms mode and any potential confusion.
- **SC 4.1.2** – The Show more / show less links (in the main content and in the right column) do not announce the state of their respective accordions to screen reader users. They need aria-expanded attributes to convey this information.
- **SC 4.1.2** – The Show/hide subsections links do not announce the state of the accordion to screen reader users. It needs an aria-expanded attribute to convey this information.
- **(updated) SC 4.1.2** – The Download PDF modal forces the screen reader in forms mode, making it difficult to navigate around the modal's content with arrow keys. Wrap the parent container of the modal with a role set to document to work around this issue.

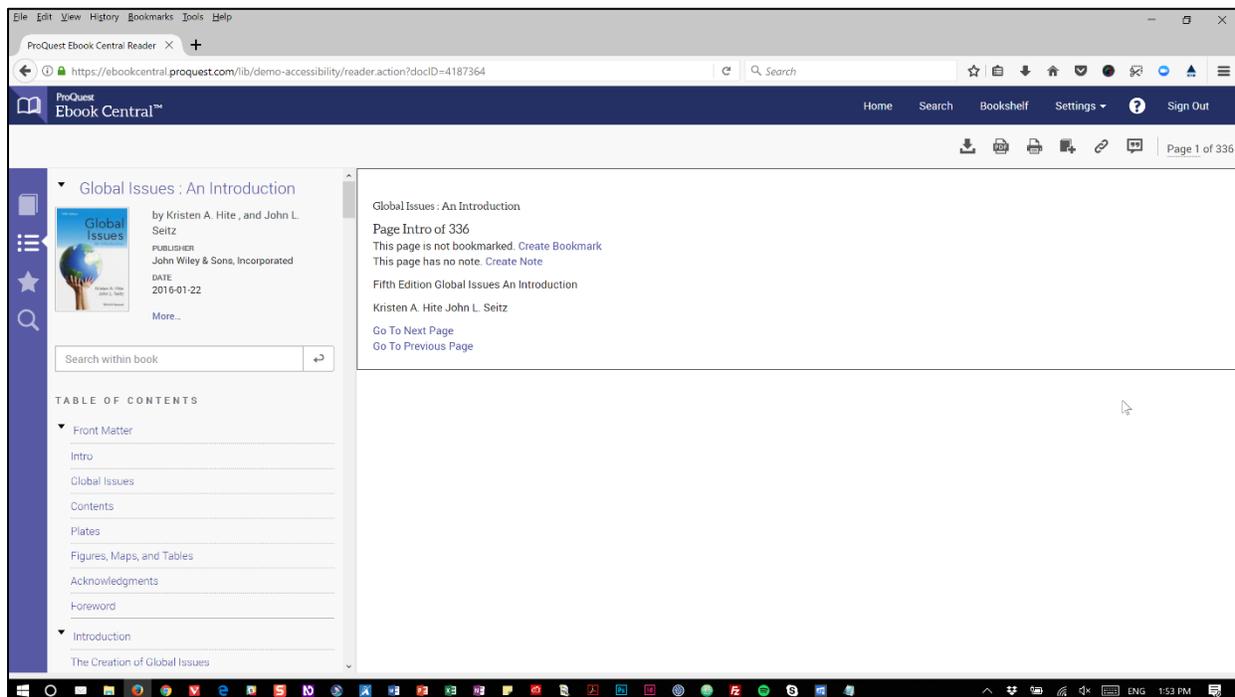
4. ProQuest eBook Central Online Reading page

Source: <https://ebookcentral.proquest.com/lib/demo-accessibility/reader.action?docID=4187364>

Test case: Read online option – how accessible is this both in and out of “accessibility mode”. PDF chapter download – how accessible is this PDF? Full download option – is the pop-up that comes up accessible? Does the file read well in Adobe Digital Editions?

IMPORTANT NOTE

This page was tested with an older version of Firefox (v52, ESR), due to the current compatibility issues between Firefox 57 and NVDA. With this version of the browser, the page would not load at all. It would loop and refresh every 2 seconds or so. Based on the rest of the assessment, my assumption is that the problems identified below would also apply in this page, with the accessibility mode turned off. Ended up testing this page with Chrome v62, and could identify the issues, as suspected.



Automated findings using Axe

- **SC 1.1.1** – The image that is part of the logo at the top does not have an alt attribute or equivalent markup.
- **SC 1.4.4** – Page uses the user-scalable=no parameter in the meta name="viewport" element that disables text scaling and zooming which is essential to users with low vision.
- **SC 4.1.1** – ID attribute values must be unique. Multiple id values are duplicated in the page.
- **SC 4.1.2** – ARIA attribute values provided for the aria-controls attributes is not valid.

Additional manual findings using NVDA screen reader

- **SC 1.3.1** – The heading structure of the page is confusing for someone who can't see the screen. Visual affordances given to the title heading is not reflected in the heading markup hierarchy.
- **SC 1.3.1** – Toolbar modals have form controls that don't have programmatically associated labels (Chapter download, Print to PDF).

- **SC 1.4.3** – The search bar on the left relies on placeholder text to provide additional instructions for the field, but this information is presented in light grey and does not meet minimum contrast ratios.
- **(new) SC 2.1.1** – In Chrome, using only the keyboard, it is impossible to get into the document pane section to read the document with NVDA.
- **SC 2.1.1** – The arrow links displayed under the Table of Contents are clickable, but cannot be operated using only a keyboard.
- **SC 2.1.1** – There is no obvious way for a screen reader user to go back to the Table of Contents once focus has been moved to the main content after having selected a section of content.
- **SC 2.4.3** – The Go to next or previous page links should send the focus to the top of the section, not the first active element shown in that section.
- **SC 2.4.3** – The modals displayed from the toolbar at the top right do not capture keyboard focus while visible. Users can tab back into the browser window (the URL bar, the tabs, etc.)
- **SC 2.4.4** – The More link is not meaningful, even within its immediate context. For someone using a screen reader, it becomes very difficult to understand what this link refers to.
- **(updated) SC 2.4.7** – The toolbar at the top right shows no visible focus ring when tabbing through items with a keyboard (true in Firefox, not accurate in Chrome).
- **SC 3.2.1** – The page seems to randomly reload at times, forcing keyboard and screen reader users back at the top of the page. They then need to make their way back into the content.
- **SC 3.3.2** – The search bar on the left relies on placeholder text to provide additional instructions for the field, but this information is not persistent, and disappears when text is typed in.
- **SC 4.1.2** – The search bar on the left relies on placeholder text to provide additional instructions for the field, but this information is not reliably conveyed to screen reader users.

Observations about the PDF document (in Adobe Acrobat)

The PDF document downloaded as the chapter document is not tagged. While it is a full text document, and not a series of images of text, the accessibility of the document will be very limited, as no semantic structure is conveyed to users of assistive technologies. Images shown in the document are not tagged either. The most basic expectations for PDF accessibility are not met in such documents.

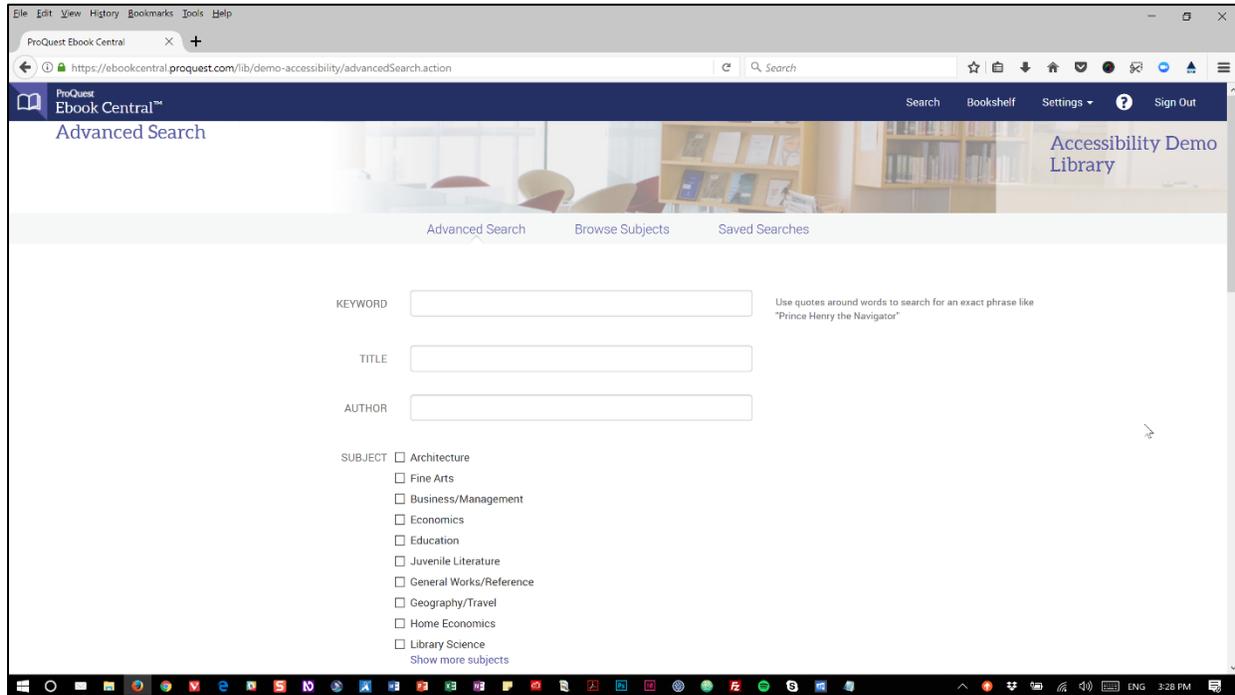
Observations about the PDF and EPUB documents (in Adobe Digital Editions)

The PDF and EPUB documents not being tagged, similar issues are found using this software. The documents cannot be considered accessible, and would not to be either remediated for accessibility.

5. ProQuest eBook Central Advanced search page

Source: <https://ebookcentral.proquest.com/lib/demo-accessibility/advancedSearch.action>

Test case: Test “Advanced Search” page for accessibility (link found under search box) - no need to do an actual search/analyze results page since that’s covered above.



Automated findings using Axe

- **SC 1.3.1** – There’s an empty UL element with a menu role assigned to it on the page.
- **SC 1.3.1** – Form controls are not programmatically associated with their labels.
- **SC 4.1.1** – ID attribute values must be unique. One id value is duplicated in the page.

Additional manual findings using NVDA screen reader

- **SC 1.3.1** – The main menu at the top is not structured using list markup.
- **SC 1.3.1** – Form groupings are not programmatically associated with their common labels.
- **SC 4.1.2** – Instructions provided for some of the form controls is not programmatically associated with their respective labels.
- **SC 4.1.2** – The Show more links are not announcing their states when triggered (collapsed or expanded).