Accessiblü

Managed Digital Accessibility Ops

Accessibility Evaluation Report:

Google Scholar

May 28, 2025

Conducted by: Accessiblü, LLC

For: Library Accessibility Network (LAA)

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Google Scholar: Summary of Accessibility Findings

Accessiblü conducted a **high-level accessibility evaluation** of the Google Scholar platform to assess its usability for individuals with disabilities. The review was conducted using the JAWS screen reader, keyboard-only navigation, and manual inspection for conformance to select WCAG 2.2 AA success criteria.

Key Findings

Google Scholar presents significant accessibility challenges that create barriers for users with disabilities, particularly those using screen readers and keyboard navigation. While the platform does include some accessible features like properly labeled search fields and some link text, critical issues such as keyboard traps, missing heading structures, and unlabeled interface elements prevent users from effectively navigating and utilizing the platform's research capabilities.

The testing revealed issues including the complete absence of heading structures on the homepage, keyboard traps in filter controls, unlabeled buttons and regions, inaccessible dialog boxes, and tables without proper names or structure. These problems significantly impact the ability of users with disabilities to conduct academic research effectively.

Addressing these concerns would enable equitable access to Google Scholar's vast repository of academic resources for all users, including those relying on assistive technologies.

Top 3 Issues Identified

1. **Keyboard Traps in Filter Controls** a. Radio button groups for Articles/Case Law selection trap keyboard focus, preventing users from navigating out without using the Escape key. b. Impact: Keyboard-only users and screen reader users become trapped and cannot continue navigation without specialized knowledge. c. WCAG Success Criteria: 2.1.2 No Keyboard Trap (A)
2. **Missing Heading Structure** a. The homepage contains no heading elements, making it impossible for screen reader users to understand page organization or navigate efficiently. b. Impact: Screen reader users cannot quickly navigate to different sections of the page or understand the information hierarchy. c. WCAG Success Criteria: 1.3.1 Info and Relationships (A), 2.4.6 Headings and Labels (AA)
3. **Unlabeled Buttons and Missing ARIA States** a. Critical interface elements like the hamburger menu button are announced as "unlabeled 0 button" and expandable menus don't communicate their expanded/collapsed state. b.

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Impact: Users cannot understand the purpose of controls or know whether their actions have produced the expected results. c. WCAG Success Criteria: 4.1.2 Name, Role, Value (A), 1.1.1 Non-text Content (A)

Disabilities Impacted

Blind and Low-Vision Users

- **Issues:** Complete absence of heading structure, unlabeled buttons, keyboard traps, missing ARIA states for expandable elements, inaccessible dialogs, and tables without proper names or structure.
- **Impact:** Screen reader users face extreme difficulty understanding page content, navigating between sections, and completing basic research tasks. The lack of proper semantics forces users to listen to entire pages linearly without the ability to skip to relevant content.

Users with Motor Disabilities

- **Issues:** Keyboard traps in radio button groups, lack of escape instructions, inaccessible interactive elements in bar graphs, and unpredictable focus management.
- **Impact:** Keyboard-only users become trapped in interface elements, requiring them to know specific key commands (Escape) that aren't communicated. Some functionality is completely inaccessible without a mouse.

Neurodiverse Users

- **Issues:** Inconsistent navigation patterns, lack of clear heading structure, missing feedback for user actions, and confusing focus order.
- **Impact:** The absence of clear page organization and inconsistent behavior makes it difficult for users to develop a mental model of the interface, increasing cognitive load and making research tasks unnecessarily complex.

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Page-Specific Findings and Impact Analysis

The following section lists the accessibility findings by **Page** and **WCAG violations** and describes their impact on users.

Google Scholar Homepage

Issue	WCAG Success Criteria	Description	Example
Missing Heading Structure	**1.3.1 Info and Relationships (A)**	No headings exist on the page to provide structure	Screen readers announce "No headings" when users attempt to navigate by headings
Missing Region Labels	**1.3.1 Info and Relationships (A)**	Page regions lack descriptive labels	Screen reader announces "unlabeled region" instead of meaningful landmarks
Keyboard Trap	**2.1.2 No Keyboard Trap (A)**	Radio button group traps focus when switching between Articles/Case Law	Users cannot tab out of the Articles/Case Law selector without pressing Escape
Unlabeled Button	**4.1.2 Name, Role, Value (A)**	Main menu button lacks accessible name	Hamburger menu announced as "unlabeled 0 button"

Positive Finding: The search input field is labeled correctly and accessible to screen readers.

Impact Summary:

The lack of a heading structure and proper labeling makes it nearly impossible for screen reader users to understand the page layout or navigate efficiently. The keyboard trap in the filter controls creates a significant barrier that could cause users to believe the interface is broken. However, the properly labeled search field does allow users to perform basic searches once they locate it.

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Google Scholar Homepage Screenshot

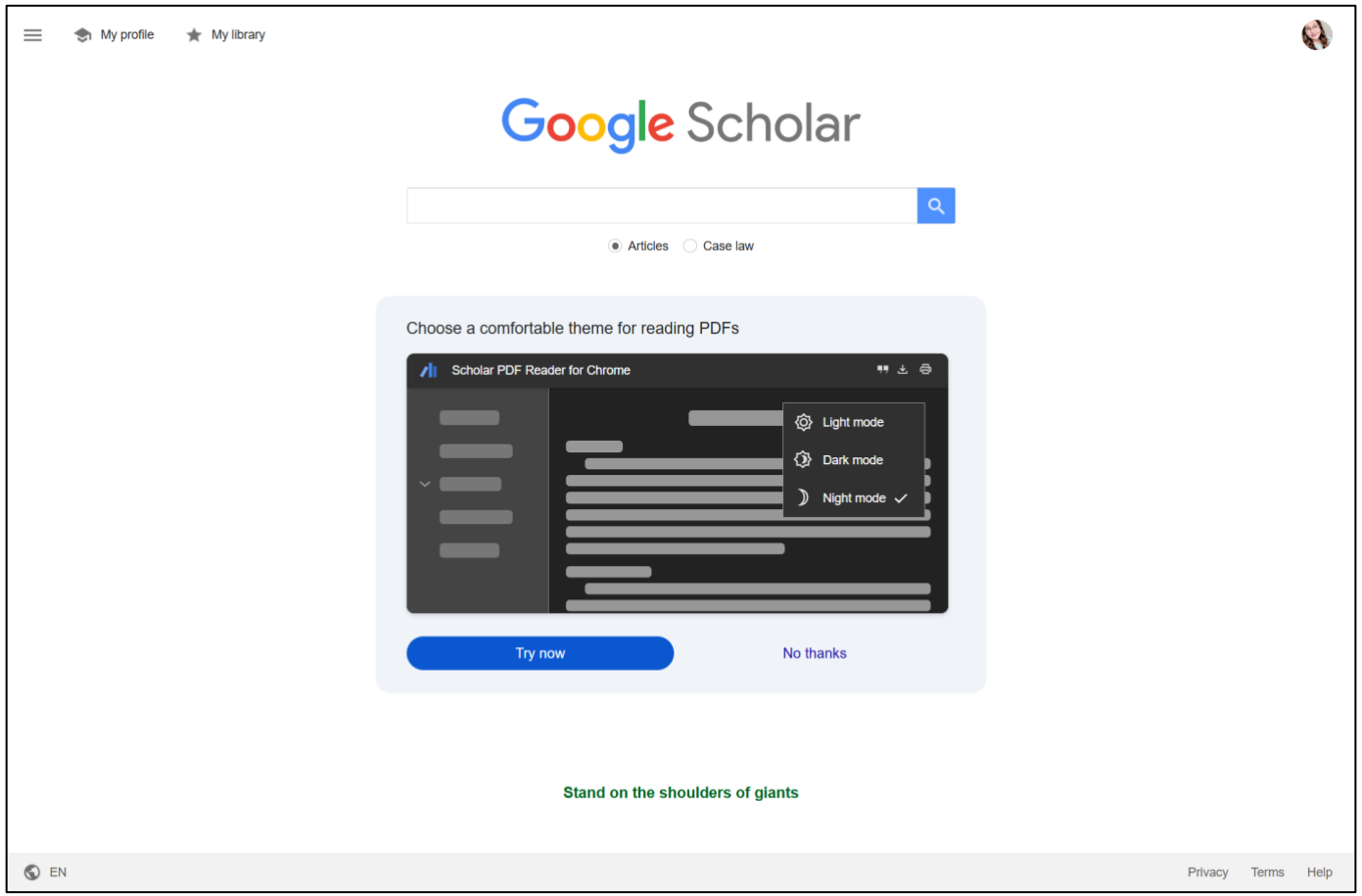

Figure 1. *The Google Scholar homepage features a minimalist design with the search bar as the primary focus.*

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Google Scholar Search Results Page

Issue	WCAG Success Criteria	Description	Example
Unpredictable Radio Button Behavior	**3.2.2 On Input (A)**	Filter options change from radio buttons to links after use	Federal Courts initially announced as radio button, then as link
Articles Not Announced as Links	**4.1.2 Name, Role, Value (A)**	Search results are coded as headings only, not as interactive links	Articles announced as "Heading level 3" without link role
Filter State Changes Not Announced	**4.1.3 Status Messages (AA)**	No announcement when filters are applied or results update	Screen readers don't announce "345 results" after filtering

Positive Findings:

- Search results count is announced (e.g., "About 6,890 results")
- Filter links are keyboard accessible
- Save functionality works with a proper dialog announcement

Impact Summary:

While users can access search results, the inconsistent implementation of interactive elements creates confusion. The lack of proper link announcement for articles forces users to guess which elements are clickable. The positive aspects include accessible filter links and result count announcements, which help users understand the scope of their search.

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Google Scholar Search Results Screenshot

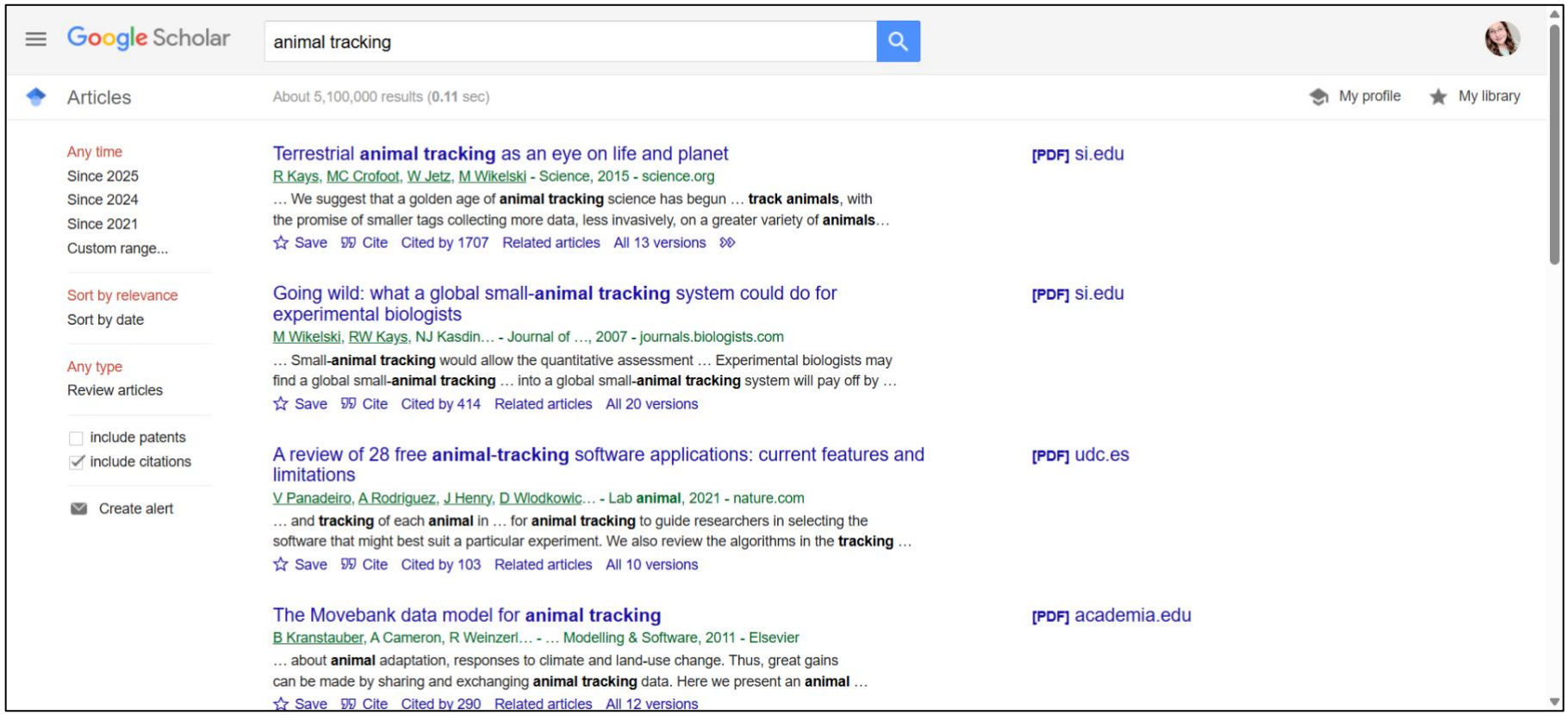

Figure 2. *The search results page displays multiple articles, with filtering options available in the left sidebar.*

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Google Scholar Author Profile Page

Issue	WCAG Success Criteria	Description	Example
Missing H1	**1.3.1 Info and Relationships (A)**	Author name should be H1 but has no heading markup	"Robert J Lennox" displayed visually but not marked as heading
Tables Without Names	**1.3.1 Info and Relationships (A)**	Multiple data tables lack accessible names	"Table with 3 columns and 21 rows" announced without context
Incorrect Reading Order	**1.3.2 Meaningful Sequence (A)**	Main content skipped when navigating with arrow keys	Screen reader jumps from author name to sidebar, missing publications
Interactive Bar Graph Inaccessible	**2.1.1 Keyboard (A)**	Bar graph elements cannot be accessed via keyboard	Citation trend graph bars are mouse-only interactive

Positive Finding: Follow button dialog is keyboard accessible and properly announced.

Impact Summary:

The author profile page contains valuable research metrics but presents them in largely inaccessible ways. The missing H1 and incorrect reading order prevent users from understanding whose profile they're viewing or accessing the main content. Tables lack context, making data interpretation difficult. However, the follow feature's accessible implementation shows that interactive elements can work properly when coded correctly.

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Google Scholar Author Profile Screenshot

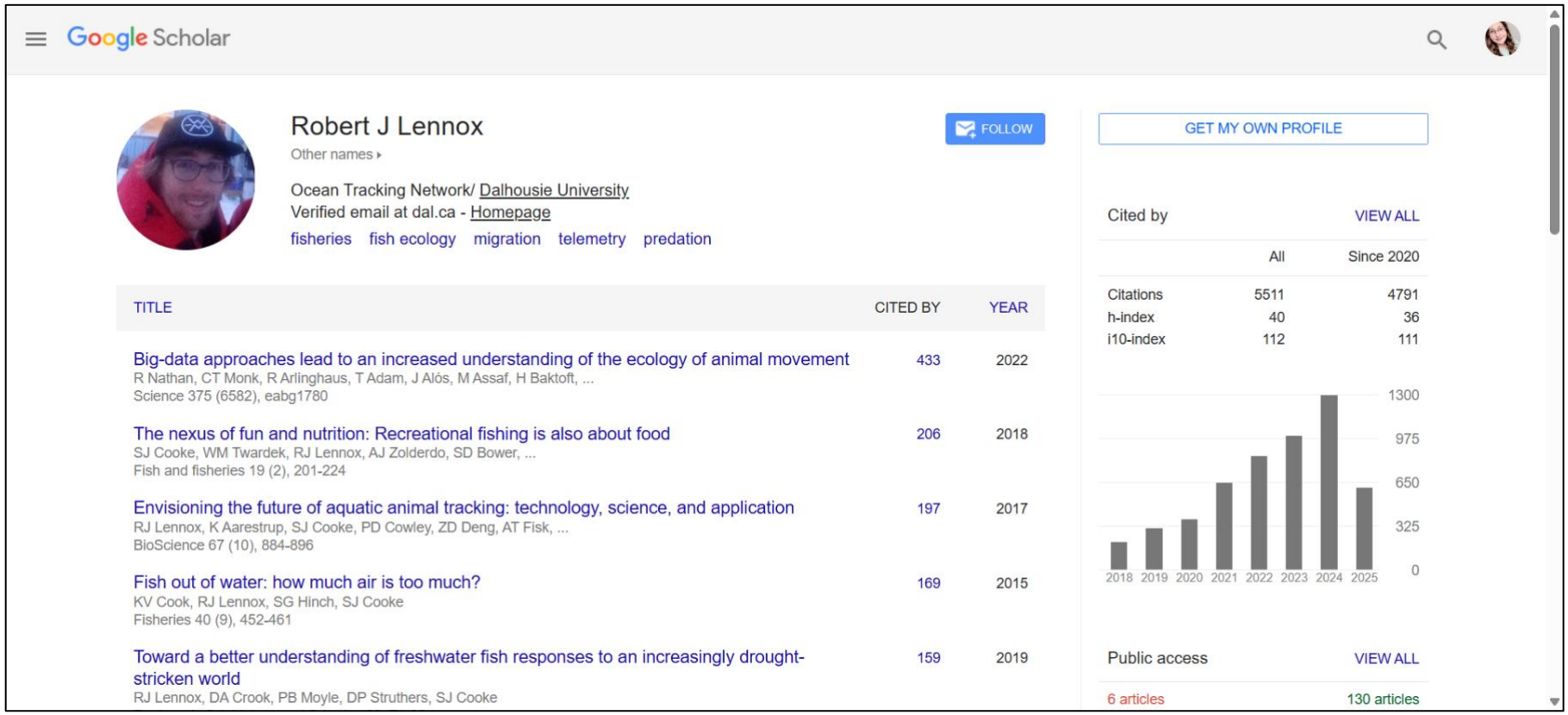

Figure 3. *The author profile displays comprehensive research metrics and publication history.*

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Google Scholar Advanced Search Dialog

Issue	WCAG Success Criteria	Description	Example
Cannot Navigate Backwards	**2.1.1 Keyboard (A)**	Shift+Tab doesn't work in dialog	Users cannot review previous fields after moving forward
Unlabeled Form Field	**3.3.2 Labels or Instructions (A)**	One date field lacks proper label	Edit field between date ranges has no accessible name
Mislabeled Close Button	**4.1.2 Name, Role, Value (A)**	Dialog close button incorrectly labeled	Close button announced as "Google Scholar document"

Positive Findings:

- Most form fields have proper labels
- Dialog is announced when opened
- Search functionality works when form is completed

Impact Summary:

The advanced search dialog is mostly accessible with properly labeled fields for search criteria. The inability to navigate backwards through fields and the mislabeled close button create usability issues but don't completely prevent use. Users can successfully conduct advanced searches despite these barriers.

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Google Scholar Advanced Search Screenshot

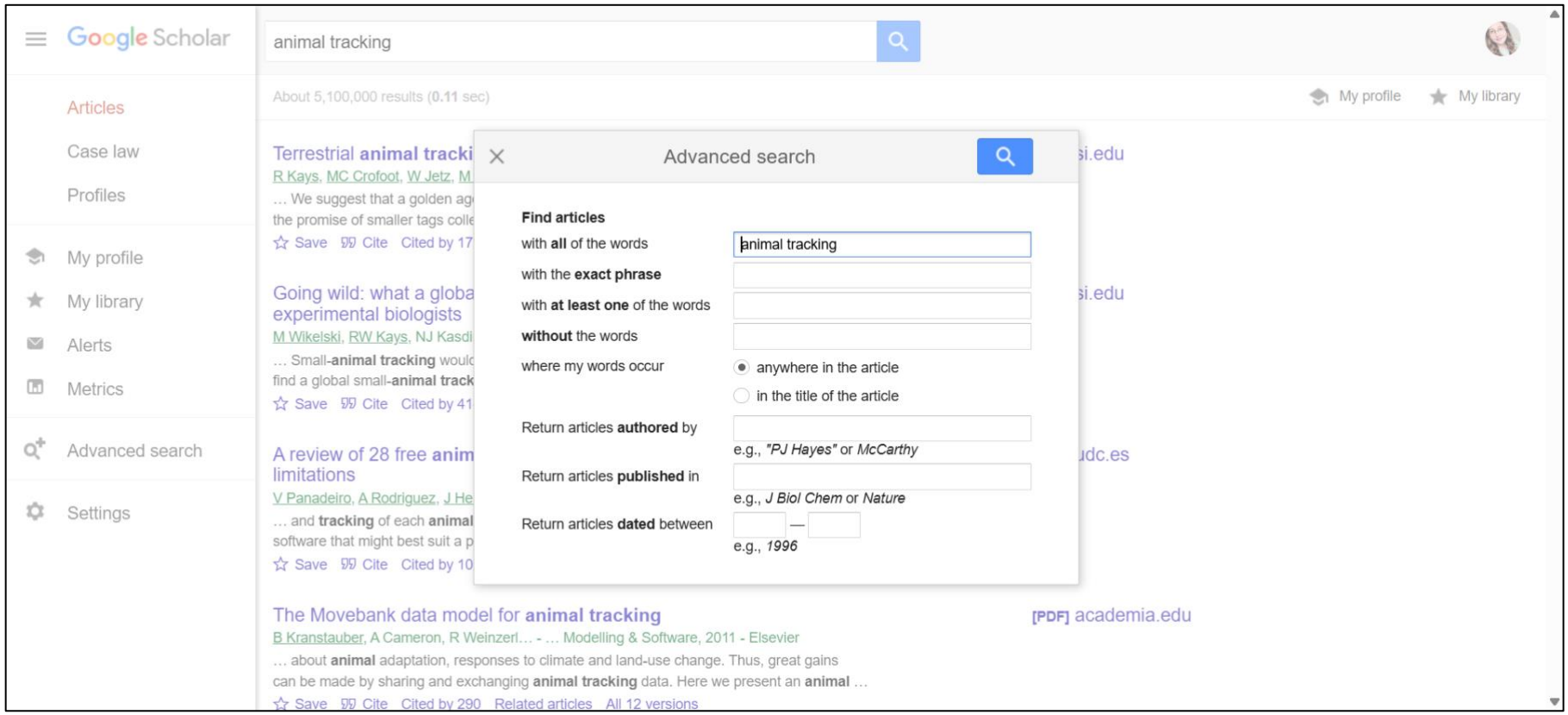

Figure 4. The advanced search interface provides detailed search refinement options.

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Google Scholar Remediation Code Snippets

Keyboard Trap Fix (2.1.2)

html

```
<!-- Current problematic implementation -->
<div role="group" aria-label="Search type">
  <input type="radio" name="searchtype" id="articles" checked>
  <label for="articles">Articles</label>
  <input type="radio" name="searchtype" id="caselaw">
  <label for="caselaw">Case law</label>
</div>

<!-- Recommended fix -->
<div role="group" aria-label="Search type" aria-describedby="nav-help">
  <span id="nav-help" class="sr-only">Use arrow keys to select, Tab to exit</span>
  <input type="radio" name="searchtype" id="articles" checked>
  <label for="articles">Articles</label>
  <input type="radio" name="searchtype" id="caselaw">
```

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```
  <label for="caselaw">Case law</label>
</div>
```

Missing Heading Structure (1.3.1)

```
html
<!-- Current problematic implementation -->
<div class="homepage">
  <img src="logo.png" alt="Google Scholar">
  <form>...</form>
</div>


<!-- Recommended fix -->
<div class="homepage">
  <h1 class="sr-only">Google Scholar - Academic Search</h1>
  <img src="logo.png" alt="Google Scholar">
  <h2 class="sr-only">Search for academic articles</h2>
  <form>...</form>
</div>
```

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Unlabeled Button (4.1.2)

html

```
<!-- Current problematic implementation -->
<button class="menu-toggle">
  <span class="hamburger-icon"></span>
</button>

<!-- Recommended fix -->
<button class="menu-toggle" aria-label="Main menu" aria-expanded="false">
  <span class="hamburger-icon" aria-hidden="true"></span>
</button>
```

Missing Table Names (1.3.1)

html

```
<!-- Current problematic implementation -->
<table>
  <tr><th>Title</th><th>Cited by</th><th>Year</th></tr>
```

```
  <!-- table content -->
</table>
```

<!-- Recommended fix -->

```
<table aria-label="Publications by Robert J Lennox">
  <caption class="sr-only">Research publications sorted by citation count</caption>
  <tr><th scope="col">Title</th><th scope="col">Cited by</th><th scope="col">Year</th></tr>
  <!-- table content -->
</table>
```

Missing Status Messages (4.1.3)

html

```
<!-- Current problematic implementation -->
<div class="results-count">About 345 results (0.05 sec)</div>
```

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<!-- Recommended fix -->

About 345 results (0.05 sec)

Google Scholar: Final Thoughts and Recommendations

Google Scholar's current implementation presents significant accessibility barriers that prevent equitable access to academic resources. While the platform includes some positive features like labeled search fields and functional save dialogs, the fundamental structural issues—missing headings, keyboard traps, and unlabeled elements—create an frustrating and often unusable experience for people with disabilities.

The issues identified are not merely cosmetic but represent fundamental barriers to core functionality. The complete absence of heading structure, combined with keyboard traps and inconsistent interface behaviors, means that users with disabilities cannot efficiently conduct research or navigate the platform's features.

However, the presence of some properly implemented features (like the search field labeling and save dialog functionality) demonstrates that Google has the capability to create accessible interfaces. With focused remediation efforts, Google Scholar could become a model for accessible academic search platforms.

Recommended Fixes

- **Implement comprehensive heading structure:** Add proper H1-H6 headings throughout all pages to enable efficient navigation and communicate information hierarchy.
- **Fix keyboard navigation:** Eliminate keyboard traps by ensuring all interactive elements can be accessed and exited using standard keyboard commands, with clear instructions where needed.
- **Add proper ARIA labels and states:** Ensure all buttons, regions, and interactive elements have descriptive labels and communicate their current state (expanded/collapsed, selected/unselected).
- **Improve table accessibility:** Add descriptive names to all tables and ensure proper header associations for data cells.

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- **Implement live regions:** Use ARIA live regions to announce dynamic content changes like search results updates and filter applications.
- **Fix focus management:** Ensure logical focus order and that focus remains in context when dialogs open and close.
- **Make visualizations keyboard accessible:** Ensure bar graphs and other data visualizations can be accessed and understood without a mouse.

Disclaimer

Accessiblü prepared this report as a high-level accessibility evaluation of the Google Scholar platform. The evaluation utilized industry-standard testing methodologies, including screen reader testing (JAWS 2025), keyboard-only navigation, and manual inspection for select WCAG 2.2 AA success criteria.

This report does not represent a comprehensive WCAG compliance audit and should not be seen as a certification of accessibility compliance. While we have identified significant accessibility concerns and usability barriers, this evaluation was limited in scope and may not encompass all accessibility issues on the platform.

No Legal Liability:

Accessiblü offers this report for informational purposes only. It assumes no legal responsibility for accessibility violations or compliance failures resulting from its use. Organizations seeking formal certification should conduct a comprehensive audit and user testing disabilities.

Limitations of Testing:

This evaluation was conducted at a specific time, and platform updates may have occurred after testing was completed. Additionally, while automated tools and expert reviews were utilized, real-world users with disabilities determine the true measure of accessibility.