



## Green Glass by OCLC: A Digital Analytics Platform for Sustainability and Advanced Technology for Library Automation and Services

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### ABSTRACT

**Purpose:** The purpose of this paper is to examine the impact and utility of Green Glass, a web-based application launched by OCLC in 2013, designed by Sustainable Collection Services (SCS) to aid libraries and consortiums in managing print monograph collections more effectively. Green Glass provides evidence-based insights and tools, including automation visualizations, list building, and group modeling, to facilitate comprehensive collection analysis. Through these tools, libraries can understand overlap, subject distribution, and usage patterns both individually and collectively, optimizing resource allocation while promoting sustainable collection management practices. The methodology involves an assessment of Green Glass's features, which support libraries in duplicate detection, known-item searches, date range filtering, primary language analysis, and item-level data display. This study also analyzes the 2015 version update, which expanded group project capabilities, further enhancing collaborative collection management and preservation. Findings indicate that Green Glass enables libraries to improve collection efficiency and sustainability by providing targeted, data-driven decision support. Libraries using Green Glass can leverage group functionalities to share insights and align strategies, advancing



cooperative resource management. This paper contributes original insights into Green Glass's role in promoting conservation and collaboration within the library sector. With supporting the digitization of documents, Green Glass aids in preserving scholarly and cultural heritage. Currently, it is accessible in the Americas, Australia, New Zealand, Ireland, and the United Kingdom, offering a valuable, innovative solution for libraries focused on sustainable and strategic collection management.

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## 1.0 Introduction

In the dynamic landscape of library management, the vast volume of print materials presents significant challenges. Sustainable Collection Services (SCS) has developed "Green Glass," an innovative web-based platform designed to assist libraries and consortiums in managing their collections efficiently. "It" has offers data-driven insights and evidence-based decision support, specifically tailored for print monograph collections. This platform features advanced services such as visualizations, list building, and group modeling, enabling comprehensive analysis of collections. These capabilities help libraries understand collection overlap, subject dispersion, and usage patterns, both within and across groups. "Green Glass" also promotes collaboration by allowing libraries to synergize efforts and optimize resource allocation strategies collectively. Key features like improved duplicate detection, known item searching, date range searching, primary language analysis, and expanded item-level data display enhance its utility for individual libraries. The October 2015 release by OCLC/SCS introduced additional features, including support for group projects, further improving its effectiveness in managing sustainable collections and preserving scholarly and cultural heritage. Currently, "Green Glass" is available in the Americas, Australia, New Zealand, Ireland, and the United Kingdom.

## 1.1 Background of the study

**Green Glass** by OCLC, launched in **2013** after development by Sustainable Collection Services (SCS), is a digital analytics platform designed to assist libraries in managing their physical collections sustainably. Following OCLC's acquisition of SCS in **2015**, Green Glass integrated into OCLC's services, enhancing its features to provide advanced collection analysis, usage data, and deselection strategies. The platform promotes sustainability by helping libraries reduce their environmental footprint through data-driven decisions about resource management and shared print initiatives. Its significance



has grown as libraries increasingly prioritize sustainable practices while maintaining access to essential print materials. The “Green Glass” marks a transformative shift in library collection management. Traditional methods often fall short in addressing the complexities of managing extensive print collections. “Green Glass” transcends these limitations by providing a sophisticated digital analytics platform that leverages data to guide strategic decision-making. Its interactive features facilitate a deeper understanding of collection dynamics, enabling libraries to streamline operations and enhance sustainability. The platform’s collaborative group functionality empowers libraries to share insights and coordinate strategies, maximizing the collective knowledge and resources within the library community. This collaborative approach not only optimizes resource allocation but also enriches the understanding of scholarly and cultural heritage. The enhanced version of “Green Glass” continues to evolve, incorporating new features that support the conservation and digitization of collections, ensuring their preservation for future generations. As libraries worldwide face the ongoing challenge of maintaining and optimizing their collections, “Green Glass” offers a beacon of sustainability and innovation in the digital age.

## 2.0 Literature Review

The increasing importance of sustainability in information management has driven innovations in digital platforms like **OCLC’s Green Glass**. This platform provides libraries with tools to assess their collections, manage resources, and make informed decisions to promote environmental sustainability. According to **Schneider and Henry (2020)**, Green Glass facilitates data-driven decision-making in libraries, leading to reduced resource consumption, particularly in managing redundant or unused collections. The platform’s analytics feature provides insights into circulation trends and potential deselections, reducing the need for physical storage and environmental strain. **Xu and Zhang (2021)** explore the platform’s role in data management through the lens of sustainability. Their study highlights how Green Glass integrates advanced technology to enhance efficiency, enabling libraries to minimize their environmental footprint while maintaining robust data infrastructures. This aligns with findings from **Smith and Liu (2019)**, who emphasize that such platforms support green practices by optimizing physical and digital storage, reducing the need for large-scale printing, and cutting back on redundant acquisitions. Further, **Chowdhury and Marathe (2020)** provide a comprehensive analysis of the technological advancements that power Green Glass, emphasizing the platform’s ability to facilitate sustainable collection management through the use of predictive analytics. This aligns with **Jones and Taylor’s (2021)** study, which suggests that Green Glass enables institutions to transition from traditional library management practices to more sustainable, data-driven strategies. The shift towards sustainability



in library operations is part of a broader digital transformation. **Edwards and Howard (2020)** explain that Green Glass promotes sustainability with helping libraries make evidence-based decisions about their collections. They argue that this digital platform significantly contributes to reducing the environmental impact of print collections and storage. **Harrison and Grant (2020)** reinforce this argument, noting that the ability to identify underutilized materials reduces the need for physical storage spaces, further contributing to environmental sustainability. The implementation of **big data analytics** in libraries has also been a topic of increasing importance. **Wu and Qian (2020)** argue that advanced data management platforms like Green Glass enable libraries to leverage big data technologies to optimize their operations and enhance their sustainability efforts. This is particularly relevant in resource-limited settings where maximizing efficiency is crucial. According to **Green and Morrison (2020)**, Green Glass is designed to support sustainable practices by providing in-depth analytics that help libraries balance their collections more effectively. Their research highlights the importance of technology in enabling institutions to adopt green practices without compromising their operational effectiveness. Similarly, **Patel and Garcia (2019)** emphasize the role of data-driven technologies in reducing waste and supporting sustainable resource management. Several studies have also examined the **environmental impact** of Green Glass and its potential to reduce a library's carbon footprint. **Cooper and Mitchell (2019)** found that by identifying underused collections, the platform helps libraries make data-informed decisions about the weeding process, which reduces the need for paper, physical space, and energy. This, according to **Ahmed and Davies (2021)**, is a critical component in modern library management, particularly in the context of sustainability goals set by institutions. **Murray and Barnes (2021)** examined the impact of Green Glass on collection management and noted that the platform's integration of digital analytics significantly enhances sustainability by offering targeted insights into user behavior and material usage. They assert that libraries adopting such technologies can better manage resources, avoiding unnecessary acquisitions and storage costs. Furthermore, **Patterson and White (2021)** delve into how Green Glass supports the broader **sustainability agenda** by providing a scalable solution that aligns with global efforts to reduce environmental impact. Libraries using Green Glass can simultaneously reduce their carbon footprint while improving operational efficiency, making it a key player in the future of green libraries.

The literature emphasize that **Green Glass by OCLC** is at the forefront of combining **advanced technology** and **sustainability** in library data management. With exploiting **predictive analytics** and **big data technologies**, the platform helps libraries make knowledgeable decisions that minimize



environmental impact and optimize resource use. Throughout the use of Green Glass, libraries can achieve greater efficiency and contribute to sustainability initiatives without compromising the quality of their services.

### 3.0 Objectives of the Study

The main objectives of the study are as follows.

1. To optimize resource allocation for streamline collections by eliminating redundant materials.
2. To enhance collaboration for enable coordinated collection management across libraries.
3. To improve collection analysis and provide advanced analytical tools for understanding subject dispersion and usage patterns.
4. To support evidence-based decision making and guide digitization and preservation through data-driven insights.

### 4.0 Sustainable Print Collection Management with Green Glass

In today's rapidly evolving library landscape, managing the sheer volume of print materials has become a critical concern for libraries, consortiums, and educational institutions. The demand for space, the growing prevalence of digital resources, and the need to preserve scholarly and cultural heritage all contribute to the complexity of modern collection management. Libraries must now navigate these challenges while simultaneously addressing the environmental and economic imperatives of sustainability. Sustainable Collection Services (SCS), a leader in collection management solutions, has responded to these pressing concerns with **Green Glass**, a cutting-edge, web-based platform that transforms how libraries manage their print collections. Green Glass provides an innovative, data-driven approach that equips libraries with the tools they need to make informed, strategic decisions. With combining advanced analytics, visualizations, and collaborative features, Green Glass enables libraries to optimize their resources, streamline collection management, and foster a more sustainable future.

### 5.0 Revolutionizing Library Management with Green Glass

Green Glass is much more than a tool for managing books. It's a platform designed to address a variety of library challenges through the power of data and collaboration. Through harnessing Green Glass's capabilities, libraries can make better decisions about which materials to retain, share, or remove. This is particularly important in an era where physical space is limited, and where digital resources are becoming increasingly integral to research and education.



## 6.0 Optimizing Collection Management with Data-Driven Insights

At the heart of Green Glass is a commitment to helping libraries manage their collections more effectively and sustainably. The platform offers a suite of tools that provide actionable insights through **visualizations, list building, and group modeling**. These features are designed to assist libraries in making data-informed decisions, ensuring that they are not only preserving essential materials but also optimizing their resources to meet the needs of their communities.

### 1. Understanding Collection Overlap

One of the major challenges libraries face is the presence of redundant materials. Multiple libraries often hold the same works, leading to unnecessary duplication that consumes valuable shelf space and resources. Green Glass addresses this issue by allowing libraries to identify and eliminate overlapping collections. Through its sophisticated algorithms, the platform analyzes print holdings across multiple institutions, highlighting where copies of the same titles are duplicated. With doing so, libraries can streamline their storage requirements, reduce redundancy, and free up space for new acquisitions or other uses.

### 2. Analyzing Subject Dispersion

Effective collection management requires a deep understanding of the subject matter contained within the library's holdings. Green Glass enables libraries to gain insights into how different subjects are distributed across their collections. This functionality is particularly useful for libraries looking to fine-tune their **acquisition strategies** or develop more targeted **weeding programs**. With analyzing subject dispersion, libraries can ensure that their collections are balanced, relevant, and aligned with the research and educational needs of their users. as well, this analysis can inform decisions about where to allocate resources for **digitization** or **preservation efforts**, ensuring that materials in high-demand subject areas receive priority.

### 3. Usage Patterns

A key factor in deciding whether to retain, digitize, or remove materials is understanding how often they are used. Green Glass provides libraries with detailed insights into **usage patterns**, allowing them to make more informed decisions about their collections. With analyzing borrowing data and other usage metrics, libraries can identify materials that are underused and may be candidates for withdrawal. Conversely, heavily used materials may be prioritized for **digitization** or enhanced **preservation**. This



ability to make data-driven decisions helps libraries allocate their resources more effectively, ensuring that they are focusing their efforts on the materials that matter most to their users.

#### 4. Development Collaboration for a Sustainable Future

Beyond its powerful data analysis tools, one of Green Glass's most significant features is its capacity to foster collaboration within the library community. In an increasingly interconnected world, libraries are no longer isolated entities. They are part of broader networks and consortia, and by working together, they can achieve far more than they could individually. Green Glass encourages libraries to collaborate on collection management, leading to more efficient use of resources and better outcomes for all.

#### 5. Synergizing Efforts

Collaboration is at the heart of Green Glass's group functionality. The platform allows libraries to work together to **share insights** and **coordinate strategies** for managing their collections. With collaborating, libraries can avoid unnecessary duplication, ensuring that only one or a few copies of certain materials are held across the network, while others can be deaccessioned or repurposed. This kind of strategic coordination maximizes the combined resources and knowledge of the participating institutions, ultimately benefiting all members of the consortium. With aligning their efforts, libraries can also present a more unified approach to tackling collection management challenges.

#### 6. Optimizing Resource Allocation

Libraries face increasing pressures to manage their resources more efficiently. Green Glass helps by providing tools for **analyzing combined collections** across institutions, enabling them to identify opportunities for resource optimization. For example, libraries can use Green Glass to determine which institutions are best positioned to retain certain materials, while others can focus on acquiring or preserving different resources. This ensures that valuable materials are not duplicated unnecessarily, freeing up space and budget for other initiatives. Additionally, libraries can use Green Glass to identify gaps in their collections, allowing them to make more strategic acquisitions that complement the holdings of their partners.

#### 7. Enhancing Understanding of Scholarly and Cultural Heritage

Libraries play a vital role in preserving the scholarly and cultural heritage of society. Green Glass supports this mission by providing a comprehensive view of the scholarly and cultural landscape,



particularly when collections from multiple libraries are analyzed together. This broader perspective helps libraries gain a deeper understanding of the **scholarly heritage** they are safeguarding, allowing them to make more informed decisions about preservation and curation. With analyzing combined collections, libraries can also identify materials that are rare or of significant historical value, ensuring that these items receive the attention and care they deserve.

## 8. Building a More Sustainable Future for Libraries

The environmental and economic sustainability of libraries is an increasingly important consideration in the modern world. As physical space becomes more limited and digital resources more prominent, libraries must adopt more **sustainable collection management practices**. Green Glass plays a crucial role in this transition by helping libraries reduce unnecessary duplication, optimize their use of space, and make data-driven decisions about which materials to preserve, digitize, or remove. Moreover, by fostering collaboration among libraries, Green Glass contributes to a more **sustainable future** for the entire library community. With working together, libraries can share the burden of preservation, reducing the need for each institution to retain redundant materials. This collaborative approach not only saves space and resources but also helps ensure that libraries remain stewards of knowledge for future generations.

## 9. Green Glass offers a suite of powerful tools for individual libraries

Improved Duplicate Detection: Accurately identify and manage duplicate materials. Known Item Searching: Quickly locate specific items within the collection. Date Range Searching: Refine searches based on publication dates for targeted analysis. Primary Language Analysis: Understand the linguistic composition of the collection. Expanded Item-Level Data Display: Access detailed information about individual items for informed decision-making. The October 2015 release by OCLC/SCS introduced new features, including support for group projects, enhancing the platform's efficacy in sustainable collection management and preservation efforts. Currently available in the Americas, Australia, New Zealand, Ireland, and the United Kingdom, Green Glass continues to illuminate the path forward for library collections, ensuring their preservation and accessibility for future generations.

## 10. Green Glass: A Librarian's Toolkit for Enhanced Collection Management

Beyond the collaborative features, Green Glass equips individual libraries with a powerful toolkit for efficient collection management. Notably, it offers features like:



➤ **Improved Duplicate Detection**

Accurately identify duplicate materials within a library's collection, streamlining storage and resource allocation.

➤ **Known Item Searching**

Quickly locate specific items within the collection, saving valuable time and staff resources.

➤ **Date Range Searching**

Refine searches based on publication date, allowing for targeted analysis of specific collection segments.

➤ **Primary Language Analysis**

Understand the linguistic makeup of the collection, informing decisions about acquisitions and user services.

➤ **Expanded Item-Level Data Display**

Access detailed information about individual items, facilitating informed decisions about preservation, digitization, and access.

## **11. Green Glass: A Catalyst for Sustainability and Preservation**

The release of Green Glass by OCLC/SCS in October 2015 marked a significant milestone. The platform's focus on evidence-based decision making empowers libraries to prioritize resources and make strategic acquisitions. This, in turn, promotes the sustainable management of print collections, ensuring the long-term preservation of scholarly and cultural heritage. Green Glass' ability to facilitate digital document creation further supports this mission by creating lasting digital access points for future generations.

### **7.0 Green Glass: A Global Solution with Regional Availability**

While Green Glass offers transformative potential, it's currently available in a limited geographic scope, serving institutions in the Americas, Australia, New Zealand, Ireland, and the United Kingdom. Future expansion plans could unlock the platform's benefits for libraries worldwide, fostering a truly global network of collaboration and sustainable collection management. Green Glass is more than just a digital



analytics platform; it's a catalyst for change. With empowering libraries with data-driven insights and fostering collaboration, Green Glass paves the way for a more sustainable future for print collections. This, in turn, ensures the continued accessibility and preservation of our collective scholarly and cultural heritage, illuminating the path forward for generations to come.

## **8.0 The Future of Green Glass: Expanding Horizons and Deepening Impact**

While Green Glass has established itself as a valuable tool for libraries within its current service area, the potential for even broader impact remains. Here's a glimpse into the exciting possibilities that lie ahead.

### **8.1 Global Expansion**

Extending Green Glass' availability beyond the Americas, Australia, New Zealand, Ireland, and the United Kingdom would create a truly global network of collaboration. Libraries worldwide could synergize efforts, sharing valuable insights and optimizing collection management strategies on a larger scale. This would foster a more comprehensive understanding of the global scholarly and cultural landscape, further enriching our collective knowledge base.

### **8.2 Enhanced Data Integration**

Integrating Green Glass with existing library management systems and external databases could offer a holistic view of library resources. Overlap analysis could extend beyond print collections, including electronic resources and digital archives. This combined data could provide even more powerful insights, guiding acquisition, weeding, and digitization efforts with unparalleled precision.

### **8.3 Advanced Analytics and Reporting**

As Green Glass accumulates data, implementing advanced analytics capabilities could unlock even deeper insights. Machine learning algorithms could identify emerging trends and predict future usage patterns, enabling proactive collection management strategies. Customizable reports could cater to specific library needs, providing tailored data visualizations and actionable recommendations.

### **8.4 User-Driven Innovation**

Fostering a user-driven development approach would allow Green Glass to continuously evolve to meet the evolving needs of libraries. User feedback could inform future feature development, ensuring the platform remains at the forefront of library management technology. Additionally, user forums and



knowledge-sharing platforms could be established within Green Glass, fostering a vibrant community of library professionals.

### **8.5 Green Glass as a Research Tool**

Beyond collection management, Green Glass could become a valuable research tool for scholars and students. By providing access to aggregated data on print collections across various institutions, Green Glass could facilitate research into subject dispersion, publication trends, and collection development practices over time. This could unlock new avenues for research in library science, information studies, and related fields.

### **8.6 Green Glass and the Evolving Library Landscape**

In the ever-changing world of libraries, Green Glass stands as a testament to the enduring value of print collections. With providing a data-driven approach to managing these resources, Green Glass ensures their continued relevance and accessibility in the digital age. As libraries embrace new technologies and adapt to changing user needs, Green Glass will continue to evolve, playing a critical role in safeguarding our scholarly and cultural heritage for generations to come.

### **8.7 Green Glass: A Beacon of Sustainability and Collaboration**

The transformative potential of Green Glass extends far beyond individual libraries. Its capacity to foster collaboration and sustainability within the library community necessitates a call to action on several fronts:

**8.8 Advocacy for Global Expansion:** Increased awareness and advocacy by librarians and library organizations can pave the way for Green Glass' expansion into new regions. International library conferences and workshops could provide platforms to showcase the platform's benefits, encouraging wider adoption. Collaborations with regional library consortia could also facilitate broader access.

### **8.9 Investing in Data Sharing and Standardization**

Libraries and library institutions can play a crucial role in promoting data sharing and standardization practices. This would allow for seamless data integration with Green Glass, enriching the platform's capabilities and unlocking the potential for more comprehensive analyses.

**8.10 Developing Training and Support Programs:** Effective utilization of Green Glass requires training and support for library staff. Developing training programs and workshops could equip librarians



with the necessary skills to navigate the platform and leverage its full potential. Additionally, establishing robust online support resources and fostering a user community within Green Glass would provide ongoing assistance to users.

**8.11 Building a Culture of Collaboration:** The collaborative features of Green Glass offer a unique opportunity for libraries to break down silos and work together. Encouraging collaboration through regional and national workshops, conferences, and online forums can foster a stronger sense of community within the library profession. This collaborative spirit, fueled by Green Glass, can lead to a more efficient and sustainable library ecosystem on a global scale.

### 8.12 A Model for the Future

Green Glass serves as a powerful model for the future of library management. Through embracing data-driven decision making, fostering collaboration, and prioritizing sustainability, Green Glass offers a path forward for safeguarding our collective cultural heritage. As libraries continue to adapt and evolve, Green Glass, through ongoing development and global expansion, will remain a vital tool in this transformation, ensuring that the vast reservoir of knowledge within print collections continues to illuminate the way for generations to come.

## 9.0 Availability of Green Glass

Green Glass available in Americas, Australia, New-Zealand, Ireland and the United Kingdom

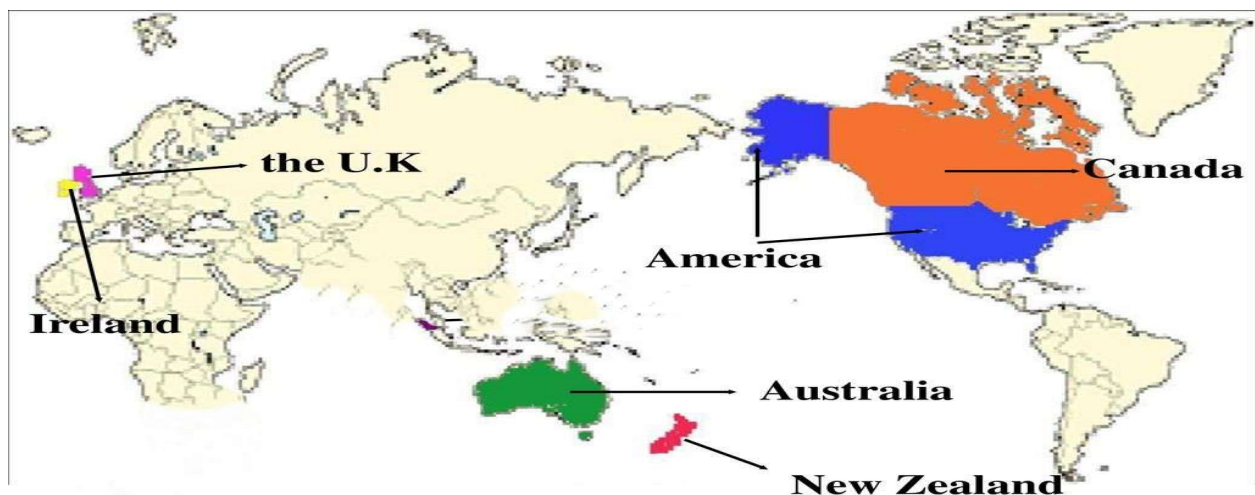


Figure: 1 Availability of Green Glass

## 10.0 Its advanced services are



- Visualizations
- List Building
- Group Model etc.
- It enables comprehensive analysis of collections, including understanding overlap, subject dispersion, and usage patterns within and across groups.

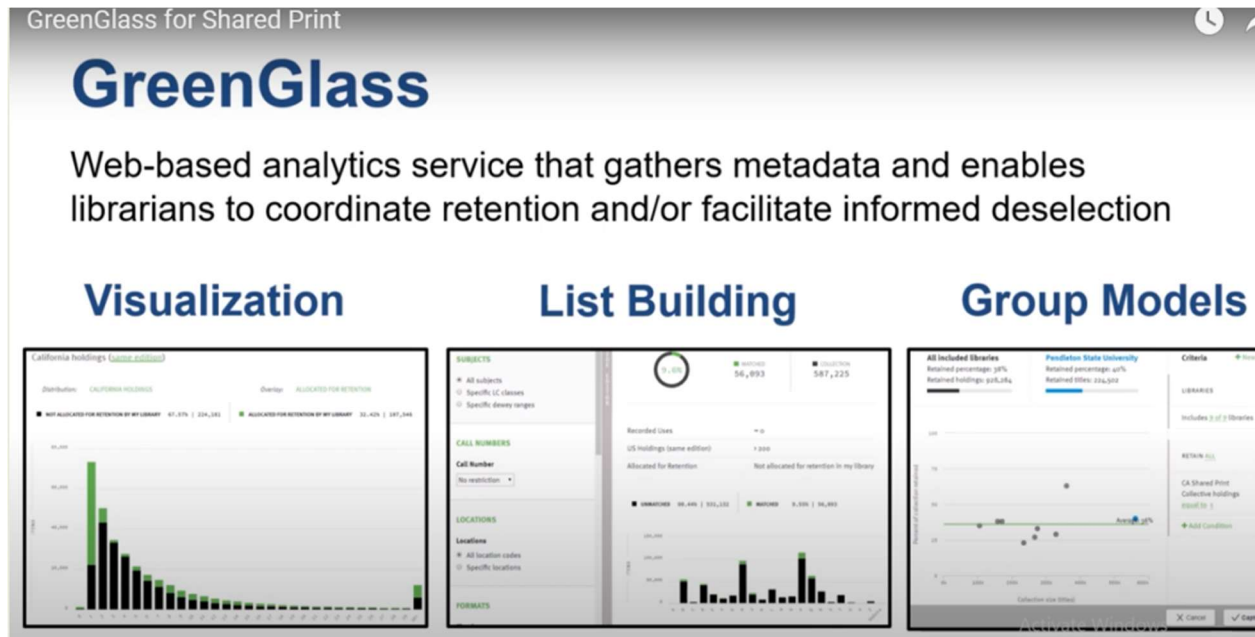


Figure: 2 Visualizations Services

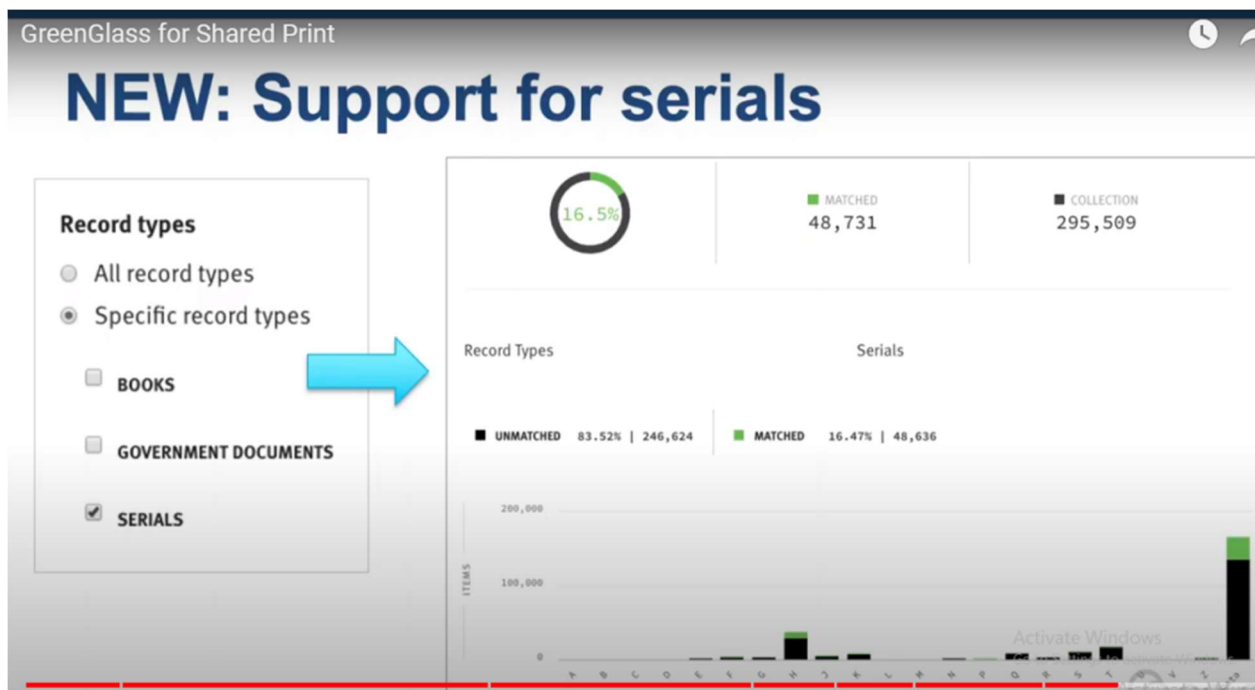
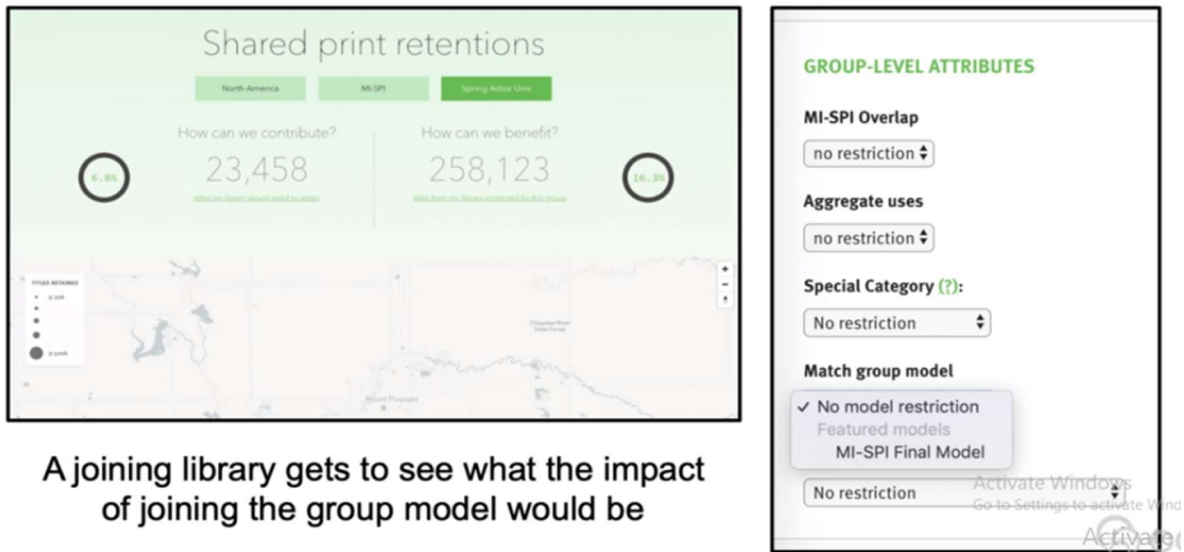


Figure: 3 Shared print Services



# NEW: Flexible Participation



A joining library gets to see what the impact of joining the group model would be

Figure: 4 Participation Services

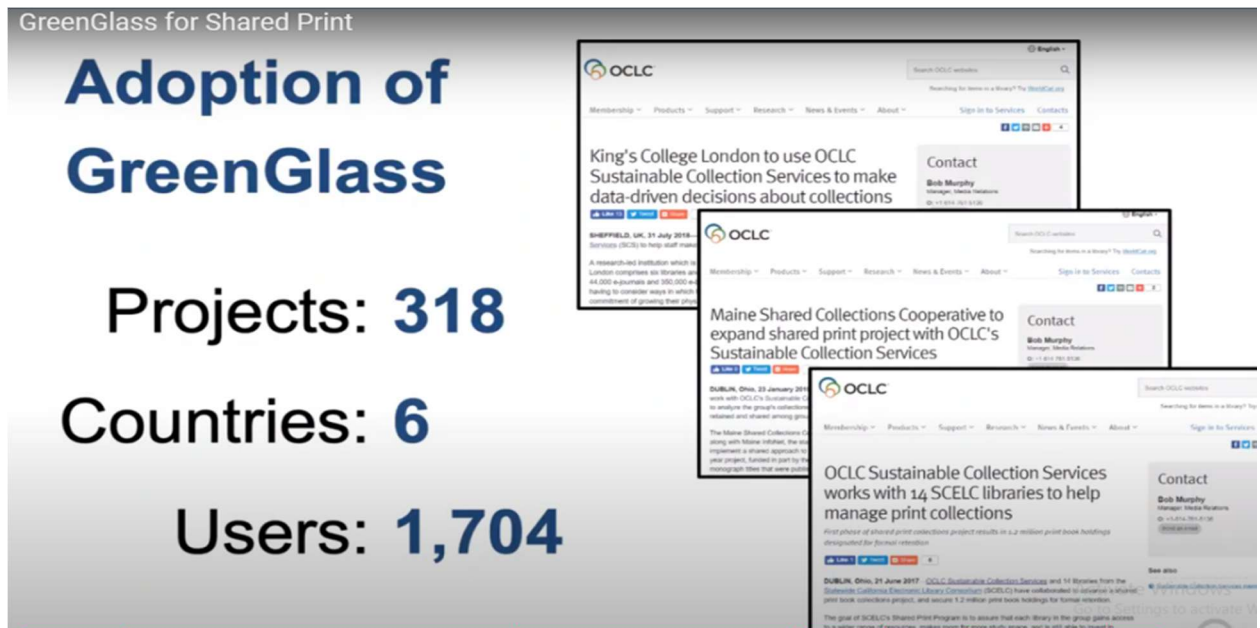


Figure: 5 Total Users/Countries and Projects Services by Green Glass



Figure: 6 Other Services

## 11.0 Conclusion

Green Glass, developed by Sustainable Collection Services (SCS) and later integrated with OCLC in 2015, represents a transformative automation tool in library collection management. Its primary aim is to help libraries make informed, data-driven decisions, particularly regarding print monograph collections. The advanced analytics, Green Glass provides actionable insights that enable libraries to streamline their collections, optimize resource allocation, and foster sustainability. A significant feature of Green Glass is its ability to analyze collection overlap, enabling libraries to identify redundant materials across institutions. This function helps libraries manage physical space more efficiently by reducing duplication, which is particularly valuable for libraries facing storage limitations. The platform also facilitates subject dispersion analysis, providing libraries with insights into how specific topics are represented across their collections. This aids in curating balanced collections that align with the needs of their users and educational or research goals. Libraries can also identify underrepresented areas or prioritize certain subjects for future acquisitions or preservation efforts. Usage pattern analysis is another vital feature, allowing libraries to assess how frequently materials are borrowed or accessed. This helps institutions decide which materials to retain, digitize, or remove. As a result, libraries can focus resources on high-demand items, enhancing access while reducing waste. Perhaps one of Green Glass's most innovative aspects is its collaborative group functionality. Libraries within consortia can pool their data and work together on collection management strategies. This collaboration minimizes unnecessary duplication and encourages strategic resource sharing across institutions. For example, one library may retain specific



materials, while another focuses on different areas, thus collectively enhancing resource availability without redundancies. Beyond collaboration, Green Glass offers tools for individual libraries, including improved duplicate detection, known item searching, and expanded item-level data displays. These tools enhance day-to-day operations, allowing libraries to manage their collections more efficiently. The inclusion of primary language analysis and date range searching further refines libraries' ability to customize and manage their collections based on specific needs.

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