Libraries' Environmentally Sustainable Practices and Services in Three States

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ABSTRACT

This article reports findings from an exploratory survey study of libraries in California, Florida, and Georgia on their day-to-day environmentally sustainable practices and related services, along with the respondents' perception of library's role and challenges in promoting environmental sustainability. Findings from this study show that the most common environmentally sustainable practices in these libraries are Reduce, Reuse and Recycle, and energy saving practices. Many libraries have taken individual actions, such as the 3Rs, or held programs on environmental issues. However, not many libraries were considered to have established policies or systematically address environmental issues. The respondents view library's role as primarily the information providers and educators. Lack of money, staff time and subject expertise are the top challenges faced by libraries when promoting environmental sustainability in their community followed by competing priorities on library's plate as well as a concern that promoting environmental sustainability in their community might be viewed as a political charge. Findings from this study contribute to the understanding of library's roles and environmental sustainability, and inform the design of future studies on this topic and provide ideas on how to better support libraries.

ALISE RESEARCH TAXONOMY TOPICS

Public libraries; academic libraries; community engagement

AUTHOR KEYWORDS

Environmental sustainability; environmental education; libraries

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INTRODUCTION

The Green Library Movement emerged in the early 1990s in which libraries aim to reduce their environmental impact by greening library buildings, operations, practices, and providing green services (Antonelli, 2008). The International Federation of Library Associations and Institutions (IFLA, 2016) has advocated for libraries' unique and important contributions to the global sustainable development efforts in which environmental sustainability is one of the three pillars of sustainable development besides economic sustainability and social sustainability. Throughout this article, the phrase "environmentally sustainable" and the term "green" are used interchangeably to describe actions and practices that are environmentally friendly.

Publications on libraries' green movement have reported some libraries' green initiatives and practices (Asim, 2021; Bincy et al., 2022; Mwanzu, 2023). In 2023, Tribelhorn assessed sustainability awareness and sustainability efforts in U.S. academic libraries using a survey and found the lack of systematic approach, limited assessment of sustainability initiatives, and little direction from leadership discouraged their implementation. The content analysis of previous publications on green libraries has also revealed the lack of a clear definition, guidelines and assessment criteria for library's green initiatives in addition to a lack of awareness and understanding of the green concept from librarians and a lack of sustainable education in the LIS curriculum (Khalid, 2021).

This study aims to fill the research gap by surveying librarians and library staff from California, Florida and Georgia to collect information on their environmentally sustainable practices and services. These states were purposefully selected because of the differences in their geographic locations and climate conditions. By looking at library's environmentally sustainable practices across multiple libraries in different locations, this study contributes to the ongoing scholarly effort to conceptualize green libraries and green librarianship.

METHOD

The development of the survey instrument was informed by previous research on libraries' environmentally sustainable practices, programs, collection development and community partnership. The survey instrument includes demographic questions on library types, service community (rural, urban, and suburban), and library positions. It also includes the dichotomous questions such as "*Does your library incorporate environmentally sustainable measures in practice?*" followed by the open-ended questions such as "*What are the measures that your library takes?*" The additional dichotomous questions and the open-ended questions include those on the libraries' programs, collection development, and community partnership related to environmental topics. Lastly, the respondents were asked the open-ended questions on their perceptions of the role libraries should play in developing the environmentally sustainable community and the challenges they face.

Data collection began in July 2020. Library workers in the states of California, Florida, and Georgia were invited to complete the anonymous web survey hosted on Qualtrics. In 2020, there were 219 public libraries in California, 78 in Florida, and 62 in Georgia (Pelczar et al., 2022). There were about 440 academic libraries in California, 170 in Florida, and 108 in Georgia

in 2020 (NCES, 2024). The survey link was shared to Florida Library Association and California Library Association's listservs and reminders were sent to individual libraries to boost the response rate. Ultimately, 74 responses were received from Florida, 103 responses from California. The survey invitation emails were sent to all the directors and staff members of the individual public libraries listed on the Georgia Public Library Service website and the individual university libraries from the University System of Georgia in September 2020. Seventy-six responses were received from Georgia. Only responses that were completely empty were removed. The total number of the responses is 203 including some incomplete responses. Out of the total 203 responses, 120 (59.1%) respondents were from public libraries, 79 (38.9%) respondents were from academic libraries, 2 (1%) from special libraries, and 2 (1%) didn't specify or respond.

PRELIMINARY FINDINGS

Data were analyzed using descriptive statistics and content analysis. The open-ended questions were analyzed using open coding. Answers were first parsed into distinctive topics. After reading and analyzing the text, a summative word or phrase emerged and was assigned to each distinct topic. This coding process was iterative and the researcher repeated the process until the codes are each comprehensive enough to capture all the subtleties under one code and distinct enough to be mutually exclusive from each other. The coding process was guided by the research questions and by the existing literature. One answer that contains multiple topics will receive multiple codes. The frequency of the codes were calculated and reported.

Libraries' environmentally sustainable policies on operation

Twenty nine of the 203 libraries reported that their libraries have environmental policies that apply to their daily operation. Table 1 below shows the distribution of the responses on policy status across the states and library types. There are no significant differences on the policy status across states and library types.

Table 1
The distribution of libraries' environmental policy status by states and library types

State	Library Types	Does your library have library operation environmental policy?			Total
		Yes	No	I don't know	
CA	Academic	8 (*38.1%*)	12 (*57.1%*)	1*(4.8%)*	21 *(100%)*
	Public	7 *(15.6%)*	26 *(57.8%)*	12 *(26.7%)*	45 *(100%)*
FL	Academic	3 *(15%)*	11 *(55%)*	6 *(30%)*	20 *(100%)*
	Public	1 *(4.2%)*	19 *(79.2%)*	4 *(16.7%)*	24 *(100%)*
GA	Academic	5 *(22.7%)*	8 *(36.4%)*	9 *(40.9%)*	22 *(100%)*
	Public	5 *(14.3%)*	24 *(68.6%)*	6 *(17.1%)*	35 *(100%)*
Total	**Academic**	**16** ***(25.4%)***	**31** ***(49.2%)***	**16** ***(25.4%)***	**63** ***(100%)***
	Public	**13** ***(12.5%)***	**69** ***(66.3%)***	**22** ***(21.2%)***	**104** ***(100%)***

Libraries' environmentally sustainable practices

Ninety one of the 203 respondents reported that their libraries implemented measures to reduce the libraries' environmental impact. Across the three states and library types, there is no statistical differences on whether their libraries adopt environmental sustainable practices (Table 2).

Table 2
The distribution of libraries' environmental measures by states and library types

State	Library Types	Does your library have measures to reduce the library's environmental impact?			Total
		Yes	No	I don't know	
CA	Academic	16 *(80%)*	4 *(20%)*	0	20 *(100%)*
	Public	20 *(44.4%)*	13 *(28.9%)*	12 *(26.7%)*	45 *(100%)*
FL	Academic	9 *(47.4%)*	6 *(31.6%)*	4 *(21.1%)*	19 *(100%)*
	Public	15 *(62.5%)*	5 *(20.8%)*	4 *(16.7%)*	24 *(100%)*
GA	Academic	8 *(36.4%)*	5 *(22.7%)*	9 *(40.9%)*	22 *(100%)*
	Public	23 *(65.7%)*	6 *(17.1%)*	6 *(17.1%)*	35 *(100%)*
Total	**Academic**	**33 *(54.1%)***	**15 *(24.6%)***	**13 *(21.3%)***	**61 *(100%)***
	Public	**58 *(55.8%)***	**24 *(23.1%)***	**22 *(21.2%)***	**104 *(100%)***

The specific environmentally sustainable practices reported were coded and the codes shown in Table 3 below. Chi-square test doesn't identify statistical significance differences on the adoption of the 3Rs and environmental efficiency practices across states and library types.

Table 3
Libraries' environmentally sustainable practices

Codes	Counts	Selected examples
3Rs	42	*"not printing due date slips"*
		"recycling of paper, plastic and glass, reuse of materials whenever possible"
Energy efficiency practices	31	*"Replacing light bulbs with LEDs"*
		"framework for solar panels"
Using environmentally friendly products	18	*"use of environmentally friendly cleaning agents"*
		"changed from styrophome to paper cups"
Library building construction and maintenance	14	*"our addition in 2010 is LEED certified."*
		"Not sure, but I know the City, who is in charge of our building maintenance, uses environmentally friendly practices."
Saving water	6	*"water bottle refilling stations throughout library"*
		"automatic faucets"
Composting	5	*"paper towel composting"*
		"composting paper towels from restrooms"

Landscaping	2	*"tree planting and greenery"* *"native landscaping"*
Acquiring electronic resources	2	*"primarily electronic resources"* *"electronic book purchasing where possible"*

Libraries' collections on environmental issues

One hundred and forty seven of the 203 respondents reported that their libraries carry some collections on environmental issues. Chi-square test doesn't identify a statistical significance difference on the environmental collection status across states and library types. Table 4 shows that most of the respondents' libraries have environmental collections or materials.

Table 4
The distribution of libraries' environmental collection status by states and library types

State	Library Types	Does your library have environmental collections and materials?			Total
		Yes	No	I don't know	
CA	Academic	19 *(95%)*	1 *(5%)*	0	20 *(100%)*
	Public	42 *(95.5%)*	0	2 *(4.5%)*	44 *(100%)*
FL	Academic	14 *(73.7%)*	3 *(15.8%)*	2 *(10.5%)*	19 *(100%)*
	Public	20 *(90.9%)*	2 *(9.1%)*	0	22 *(100%)*
GA	Academic	21 *(100%)*	0	0	21 *(100%)*
	Public	31 *(88.6%)*	2 *(3.6%)*	2 *(3.6%)*	35 *(100%)*
Total	**Academic**	**54 *(90%)***	**4 *(6.7%)***	**2 *(3.3%)***	**60 *(100%)***
	Public	**93 *(92.1%)***	**4 *(4%)***	**4 *(4%)***	**101*(100%)***

Libraries' programs on environmental issues

Seventy two respondents reported that their libraries provide information and education on environmental topics. Table 5 shows the distribution of the respondents' programming offerings across states and library types.

Table 5
The distribution of libraries' environmental programs status by states and library types

State	Library Types	Does your library have programs related to environmental topics?			Total
		Yes	No	I don't know	
CA	Academic	6 *(30%)*	14 *(70%)*	0	20 *(100%)*
	Public	30 *(68.2%)*	8 (18.2%)	6 *(13.6%)*	44 *(100%)*
FL	Academic	2 *(10.5%)*	12 *(63.2%)*	5 *(26.3%)*	19 *(100%)*
	Public	15 *(65.2%)*	4 *(17.4%)*	4 (17.4%)	23 *(100%)*
GA	Academic	3 *(14.3%)*	15 *(71.4%)*	3 *(14.3%)*	21 *(100%)*

	Public	16 *(45.7%)*	14 *(40%)*	5 *(14.3%)*	35 *(100%)*
Total	**Academic**	**11 *(18.3%)***	**41 *(68.3%)***	**8 *(13.3%)***	**60 *(100%)***
	Public	**61 *(59.8%)***	**26 *(25.5%)***	**15 *(14.7%)***	**102 *(100%)***

Chi-square test ($p<.001$) shows a statistic significant difference between academic libraries and public libraries in their programming activities on environmental topics. These program activities were coded and the codes shown in Table 6 below.

Table 6
Libraries' programs on environmental issues

Codes	Counts	Selected examples
Programs	36	*"programs on plant-based living, waste-free and reduced waste living, bee keeping, and others"*
		"upcycling programs, fix-it yourself programs"
Information sessions	25	*"a series of "difficult topics", and climate change was the last one we did before the pandemic."*
		"adults - lecture on American Public Opinion on Climate Change"
Events	10	*"Earth day"*
		"plant-seeds event with students"
Exhibits	4	*"exhibits that promote campus programs & library holdings/collections"*
		"Exhibit Student posters"

Libraries' community partnership on environmental issues

Sixty respondents reported that their libraries partner with other organizations on environmental topics. Table 7 shows the distribution of the responses across states and library types.

Table 7
The distribution of community partnership status by states and library types

State	Library Types	Does your library collaborate with other organization(s) to promote environmental awareness?			Total
		Yes	No	I don't know	
CA	Academic	11 *(57.9%)*	7 *(36.8%)*	1 *(5.3%)*	19 *(100%)*
	Public	18 *(40%)*	20 *(44.4%)*	7 *(15.6%)*	45 *(100%)*
FL	Academic	4 *(22.2%)*	10 *(55.6%)*	4 *(22.2%)*	18 *(100%)*
	Public	8 *(33.3%)*	8 *(33.3%)*	8 *(33.3%)*	24 *(100%)*
GA	Academic	5 *(23.8%)*	12 *(57.1%)*	4 *(19%)*	21 *(100%)*
	Public	14 *(41.2%)*	12 *(35.3%)*	8 *(23.5%)*	34 *(100%)*
Total	**Academic**	**20 *(34.5%)***	**29 *(50%)***	**9 *(15.5%)***	**58 *(100%)***
	Public	**40 *(38.8%)***	**40 *(38.8%)***	**23 *(22.3%)***	**103 *(100%)***

Chi-square test didn't identify a statistic significant difference on respondents' libraries partnership status across states and library types. These partnership were coded and the codes shown in Table 8 below.

Table 8
Libraries' community partnership on environmental issues

Codes	Counts	Selected examples
Environmental organizations	17	*"local master gardener" "keep America Beautiful"*
		"local climate change organization" "Center for Community Action and Environmental Justice"
Other organizations (non environmental groups)	14	*"waste management"*
		"local university and local schools"
Government agencies	14	*"County Office of Sustainability"*
		"Local EPA
Community events	2	*"campus wide sustainability initiative"*
		"Earth Day festival"

Libraries' roles in promoting environmental sustainability in community

The respondents' answers to what they perceive to be libraries' roles in promoting environmental sustainability in community were coded and the codes shown in Table 9 below.

Table 9
Libraries' roles in promoting environmental sustainability in community

Codes	Counts	Selected examples
Information provider	40	*"Making resources available, and partnering with other agencies to support their activities."*
		"Libraries should have information about sustainability that is easily accessible to our patrons."
Educator	21	*"The library should be the location where the community can come together to receive information and education."*
		"I believe should support these efforts by providing resources to inform and educate the public.
Community partner	15	*"helpful to be at the table; we aren't always included or aware when these take place"*
		"Libraries should be a resource for information, be open to partnerships."
Model	11	*"Modeling sustainable practices"*
		"Libraries should practice conservation as much as possible and make efforts to use energy efficient technology whenever possible and reasonable."
	10	*"one of the leaders"*

Leader (Or Non Leader)	*"Support of the community but led by the community not the library."*

Challenges faced by libraries in promoting environmental sustainability in community

The respondents' answers to what they perceive to be libraries' challenges in promoting environmental sustainability in community were coded and the codes shown in Table 10 below.

Table 10
Challenges faced by libraries in promoting environmental sustainability in community

Codes	Counts	Selected examples
Money and Resource	28	*"Not enough time or money*
		"Mostly budgetary."
Staff time and expertise	26	*"Programming staffers not being trained or comfortable running or designing programs outside their comfort zone"*
		"Speakers with no experience"
Community buy-in	24	*"public not interested"*
		"the climate change deniers."
Political charge	15	*"politicization of environmental issues in a conservative demographic"*
		"I worry that it would become a political issue and turn certain members of the community against the library.
Competing priority	14	*"Too many other activities/tasks/committees that staff have to work on."*
		"right now- not at the top of people's worries"
Library staff and administrator buy in	10	*"We're driven by the county. My county builds to code, isn't interested in LEED, b/c it's too expensive."*
		"Staff buy-in. If those in charge of budgeting and programming don't care, then nothing can be done."

DISCUSSION

Results from this study show there are not many statistical significant differences of library's environmentally sustainable practices across states and library types despite the different geographic locations and climate conditions. Because of the lack of money, time and expertise, the most common library service on environmental sustainability is providing collections, which is something that the libraries have already been doing for a long time. But the collections size and depth vary greatly across libraries. This coincides well with the respondents' perception of library's primary role in promoting environmental sustainability should be information providers.

Only a few libraries have an environmental policy in place. One of the challenges identified by the respondents is for libraries promoting environmental sustainability be considered as a political charge. This concern keeps some libraries from taking on any active measures to provide environmental sustainability information and relevant services. On the other hand, there are respondents reporting experiencing no challenges whatsoever. Findings further confirm previous publications that libraries' environmentally sustainable practices and services are largely situated in its local context such as the local government, funding, community, staff, and resources. Although the previous studies were mostly about one library at a time, many findings from those studies were found to be the case for multiple libraries in this study.

To better support member libraries' effort, professional organizations at various levels can provide customizable tool kits which individual libraries could adjust according to their local context. This saves individual libraries' resource and time. It's also help for professional organizations to continue to provide training on environmental literacy and grant opportunities. Lastly, it's important that libraries provide environmentally sustainable services in a way that's inclusive and not alienating. Libraries need also receive training on how to achieve this.

REFERENCES

Antonelli, M. (2008). The green library movement: An overview and beyond. *Electronic Green Journal*, *1*(27). https://doi.org/10.5070/G312710757

Asim, M., & Ahmad, P. (2022). Adoption of green practices in university libraries of Pakistan: A qualitative study. *Library Philosophy and Practice*, 1–8.

Bincy, O. K., & Vasudevan, T. M. (2023). Environmental sustainability: Awareness and practices among library professionals in University of Calicut. *The Journal of Academic Librarianship*, *49*(4), 102748.

International Federation of Library Associations and Institutions (IFLA). (2016). *Access and opportunity for all: How libraries contribute to the United Nations 2030 agenda*. https://repository.ifla.org/handle/123456789/243

Khalid, A. (2021). Sustainable development challenges in libraries: A systematic literature review (2000–2020). *The Journal of Academic Librarianship*, 9.

Mwanzu, A., Bosire-Ogechi, E., & Odero, D. (2023). Green initiatives towards environmental sustainability: Insights from libraries in Kenya. *IFLA Journal*, *49*(2), 298–314. Library, Information Science & Technology Abstracts. https://doi.org/10.1177/03400352221135012

National Center for Education Statistics (NCES). (2024). Integrated Postsecondary Education Data System (IPEDS). Retrieved August, 2024, from https://nces.ed.gov/ipeds/use-the-data

Pelczar, M., Soffronoff, J., Nielsen, E., Li, J. & Mabile, S. (2022). Data file documentation: Public libraries in the United States fiscal year 2020. Report, Institute of Museum and Library Services. Retrieved August, 2024, from https://www.imls.gov/sites/default/files/2022-07/2020_pls_data_file_documentation.pdf

Tribelhorn, S. K. (2023). Preliminary investigation of sustainability awareness and activities among academic libraries in the United States. *The Journal of Academic Librarianship* 49(3). https://doi.org/10.1016/j.acalib.2022.102661