

UCLA

Electronic Green Journal

Title

Sustainable Pathways: Leadership Through Library Innovation at Western Colorado University

Permalink

<https://escholarship.org/uc/item/2qr9b3hb>

Journal

Electronic Green Journal, 1(54)

Authors

Wick, Tiffanie

Yadon, Kimberly

Publication Date

2026-10-01

DOI

10.5070/G3.47489

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Peer reviewed

**Sustainable Pathways: Leadership Through Library Innovation at Western
Colorado University**

Tiffanie Wick and Kimberly Yadon

Western Colorado University, Gunnison, Colorado, United States

Abstract

Institutions of higher education have increasingly engaged in environmental sustainability initiatives, reflecting growing societal concern about climate change and resource conservation. This case study examines a collaborative sustainability initiative at Western Colorado University in which five campus units, including the Leslie J. Savage Library and the Teaching and Learning Center (TLC), addressed the environmental impacts of waste-intensive campus events. Confronted with logistical and infrastructural obstacles to sustainable practices, the library and TLC implemented a low-cost, high-impact solution involving a portable, energy-efficient dishwasher and reusable “zero-waste kits.” This initiative significantly reduced event-related waste improved operational efficiency, and increased sustainability awareness across campus. The project aligns with the United Nations Sustainable Development Goals and shows how modest infrastructural changes, supported by cross-departmental collaboration, can foster a culture of sustainability in higher education. The pilot project and partnership provide a replicable framework for other institutions looking to integrate environmental stewardship into everyday operations.

Sustainability in Libraries

Libraries serve as gathering spaces for academic discussions, professional development, and community engagement, often hosting food-inclusive events. However, these events generate significant waste, including disposable packaging, single-use utensils, and excess food waste. While convenient, these practices contribute to larger environmental issues, such as landfill overflow, resource depletion, and greenhouse gas emissions from waste decomposition. Given the library's role as a hub for learning and innovation, addressing these sustainability concerns aligns with its mission to model responsible stewardship and forward-thinking solutions. Libraries serve as role models in their communities by showing commitment to environmental stewardship. Implementing green practices, such as modeling sustainable behaviors (i.e., waste reduction) and training library staff on environmental sustainability best practices can significantly reduce a library's footprint and operational costs (Singh &

Mishra, 2019). By actively reducing their environmental footprints, university libraries can show leadership in sustainable event planning while fostering a culture of environmental responsibility on campus.

The issue extends beyond waste generation. Many campus events rely on individually packaged meals or disposable tableware, which are resource-intensive to produce and typically challenging to recycle effectively. Even when recycling options exist, contamination from food waste can make materials unrecyclable, further straining waste management systems. Moreover, the reliance on disposable products perpetuates a culture of convenience that contradicts broader institutional commitments to sustainability. By continuing these practices, libraries risk missing an opportunity to integrate environmental literacy into everyday campus life. Universities have long been considered “change agents” (Stephens et al., 2008) and “catalysts” (Waas et al., 2010) in the effort to design a more sustainable world. So, events in a university library provide a natural platform to educate students, faculty, and staff about sustainable practices, reinforcing the library’s role in promoting informed, responsible engagement with environmental issues.

From an operational perspective, waste-heavy events also create logistical challenges. Cleanup after large gatherings requires significant staff time, and the volume of waste can quickly overwhelm library facilities. Additionally, as institutions face increasing pressure to meet sustainability goals and reduce their carbon footprint, library-hosted events must align with these broader efforts. Without intentional changes, the environmental impact of routine programming will continue to grow, conflicting with the values of resource conservation and responsible consumption. Beutelspacher and Meschede suggest that libraries model sustainable practices by reducing energy consumption through the purchase of energy-efficient equipment, encouraging recycling and waste reduction, and adopting environmentally friendly policies (2020). By integrating sustainability into event planning, libraries can reduce their environmental footprint while setting an example for other campus departments.

Recognizing these challenges, the Leslie J. Savage Library sought to implement a model of environmental stewardship that would reduce waste while promoting environmental literacy—a partnership that began between the library and the TLC aspired to demonstrate that low-waste alternatives are feasible and beneficial by rethinking food service and cleanup and incorporating sustainability into event planning. This approach supports institutional sustainability goals and encourages the campus community to engage with sustainable practices in meaningful ways. Through these efforts, the library reinforces its role as both a leader in sustainability and an educator in environmental responsibility, helping to shape a more sustainable future for higher education and beyond.

From Silos to Solutions: A Case in Campus Sustainability

Universities often commit to environmental stewardship in mission statements and strategic plans, especially in states like Colorado, where environmental health directly

shapes infrastructure and community well-being. However, there are unique challenges in higher education that make it hard to build systems that make sustainable choices practical, visible, and shared. According to Leal Filho et al. (2017, p.94), an important challenge for institutions of higher education to overcome is “to include [sustainability] holistically into their systems.” At Western Colorado University, a small campus with ambitious goals, five departments turned the everyday problem of event waste into an opportunity.

Even when environmental stewardship is part of the strategic plan, differences in resources, timelines, and priorities can stall collective action. But the development of a sustainability culture within a university’s institutional framework can have a substantial impact both on campus and beyond (Findler et al., 2019). “This start[s] at the campus, where the culture of university staff is key to alumni transformation.” (Žalėnienė and Pereira, 2021, p. 105)

In 2024, the Leslie J. Savage library, the Teaching and Learning Center (TLC), the LEAD Sustainability office, the Sustainability Action Committee (SAC), and Campus Operations came together with a simple but powerful question: how do we make low-waste events part of the organizational culture on campus? The challenges were clear but complex. The library hosts regular events, and the TLC held over forty food-based gatherings during the 2024–25 academic year. Despite best efforts using compostables, recyclables, and encouraging responsible disposal the trash bins were always full. The university already had a promising solution in place: reusable “zero-waste kits” available through the LEAD Sustainability office, however, organization was a barrier. The library lacked a kitchen with hot water. Library staff often handwashed dishes with only cold or lukewarm water in the staff lounge, heating water on the stove or microwave, which posed sanitation, efficiency, and energy concerns. At times, staff resorted to taking dishes home to wash in their personal dishwashers—an unsustainable, unscalable, and inequitable practice that placed an undue burden on individuals. The situation was even more challenging for TLC; due to food allergies, handling and cleaning shared dishes posed a significant health risk. As a department of one, TLC could not take part at all, despite being the largest contributor to event waste in the building. Despite strong personal and institutional commitments to sustainability, the Teaching and Learning Center relied entirely on disposable tableware. Rather than viewing these challenges as insurmountable, five units worked together to remove a structural barrier to sustainable behavior. They researched, bought, and installed a highly rated portable dishwasher, moved a zero-waste kit to the library, and set up shared protocols for use. The result was not just a holistic solution to a local problem—it was a model for a low-cost, high-impact framework that could be replicated across campus.

This case study documents that effort. It examines the use of a portable dishwasher as a practical tool for supporting environmental stewardship, evaluates its effectiveness, and considers how small shifts in infrastructure and cooperation can drive broader institutional change.

Case Analysis and Early Outcomes

Evaluation

As an environmental stewardship initiative, the goals of the portable dishwasher project were to: reduce our environmental footprint, adopt more sustainable practices, and promote environmental literacy across campus. These goals generally align with conversations around library sustainability. Often, these “evolve around a sustainability model known as the triple bottom line (TBL) or the three-legged stool, which includes economic, environmental, and social pillars (Tanner et al., 2019). Although still in an early stage, this initiative has already successfully met the established goals and has the potential to do so for years to come.

The library at once reduced its energy consumption and waste generation with the portable dishwasher. The zero-waste meal kits are no longer being transported in cars to be washed in dishwashers with unknown environmental ratings. Now, they are carried to the on-site kitchen and washed in a dishwasher with a high energy-consumption rating using eco-friendly soap. In addition, all events have transitioned from high producers of trash to either zero- or low-waste, depending on the caterer. This solution is so user-friendly that even TLC, with limited resources, can offer all events using this sustainable model.

This project positions the library and the TLC to promote environmental literacy across campus. Most events hosted by these departments are open to all faculty and staff. These are well-attended events that happen regularly, so attendees have had the opportunity to see the evolution from high-waste to low-waste events and took part in the project by carrying their own dishes and recycling eligible waste. Inviting everyone to join has brought attention to the initiative and enabled the library, the TLC, the LEAD Sustainability office, the Sustainability Action Committee, and Campus Operations to talk with units across campus about the feasibility and sustainability of this solution.

Evidence

Environmental Footprint

Research on waste generated at local events provides a baseline to estimate per-attendee waste generation. A 2006 study by the Northeast Recycling Council found that community events produced 0.22 to 1.25 pounds of waste per attendee. This range supports the commonly cited estimate of one pound of waste generated per person, per meal. So, that one pound/person calculation was used to estimate the amount of library and TLC-hosted event waste generated in the 2024–25 academic year, before the portable dishwasher initiative was implemented. TLC held seventeen events in the fall semester, with an average of twenty participants per event. Before the solution could be implemented in the spring semester, the TLC hosted nine other events. Using the common calculation, the TLC produced approximately 520 pounds of waste. This is equivalent to disposing of a baby grand piano or a well-fed grizzly bear.

Calculating the waste generated by library-hosted events is more challenging because the library was already using the zero-waste kits during the 2024-25 academic year. However, the reusable dishes were either transported to and from campus for sanitation, or they were handwashed in the staff lounge using the only method available: manually heating gallons of water for washing and rinsing on the stove. Neither sanitation method was resource nor energy efficient. While there is no straightforward formula for calculation in these circumstances, it is reasonable to approximate that implementing reusable plates and utensils reduced event waste generation by approximately 50%. During the 2024-25 academic year, Leslie J. Savage Library hosted four luncheon events utilizing zero-waste kits (74 attendees at an estimated 0.5 lb. of waste per person) and four events with disposable tableware (approximately 150 participants at 1 lb. of waste per person), resulting in an estimated total of 190 pounds of waste. The adoption of reusable tableware likely prevented an added 34 pounds of waste from being generated.

Sustainable Practices

Implementation of a portable dishwasher stands for three key practices that are outlined in Goal 12 of the United Nations Sustainable Development Goals (2024). The Danby portable dishwasher is highly rated for resource efficiency. It is Energy Star Compliant, has a low water consumption mode, and uses no more than 3.5 gallons of water per cycle (Danby, 2024). By comparison, handwashing tableware in the staff lounge uses approximately ten gallons per event: five gallons to wash and another five to rinse. Zero-waste kits allow for significant event waste reduction. For example, just four library-hosted events using reusable tableware reduced the amount of disposable plate and utensil waste by an estimated 34 pounds. While not every event is zero-waste because of catering options, this initiative cuts the use of paper plates, plastic utensils, disposable cups, and disposable service ware at library events. Dropping these items enables both the library and the TLC to practice conscious consumption, making informed choices about buying and using sustainable products, such as non-toxic, eco-friendly dishwasher pods.

Environmental Literacy

Academic libraries are uniquely positioned to support campus sustainability initiatives and raise environmental awareness by providing space for lectures, displays, and events, and helping partnerships (Beutelspacher & Meschede, 2020). In the 2024-2025 academic year, the Leslie J. Savage Library and the Teaching and Learning Center hosted a total of 55 events with participants from administration, faculty, staff, and even the occasional student. The approximate number of people who took part in these events was 1,000. The portable dishwasher initiative was implemented late in the academic year, but the TLC was still able to ensure that ten of those events were low waste. These events were advertised as low-waste, and the zero-waste kits—bright green dishes and flatware—are recognizable on campus as a sustainable initiative. Each of the low or zero waste events held in the library serves as a model of a low-cost,

high-impact sustainable practice that could be replicated across campus. They prove how a small monetary investment can have a big environmental impact.

Discussion

Danby, the company that sells the portable dishwasher, does not share an average lifespan for this model. However, the consensus among reviewers is that it will last for three to four years of daily use (or between 1,095 and 1,460 wash cycles). The library and the TLC will not use the dishwasher daily. The goal is to organize approximately twenty food-serving events each semester. Due to the expected reduced frequency of usage, the appliance is expected to exceed the typical lifespan of three to four years. Forty uses per year equals 120 wash cycles over three years. Using simple calculations ($1,095/120$), it is possible that, at the low end, this appliance could last up to nine years. However, there are factors that could contribute to a shorter lifespan for the appliance. For example, plastic parts tend to break, and hard water is known to accelerate wear and tears. As with any purchase that outlives its warranty, it is impossible to guess how long the appliance will last.

Applying the common calculation of one pound of waste per person per meal to the average number of events hosted each year, more than 1,000 pounds of waste could be generated in just one year. While the portable dishwasher solution does not enable the library to drop a full 1,000 pounds of waste per year, it does create a significant and meaningful reduction in both waste and energy consumption.

This environmental stewardship initiative has not presented any significant challenges or barriers to overcome. The expense of the portable dishwasher—shared by the TLC and SAC—was minimal. Campus Operations helped with the installation, and the appliance works as expected. It is under warranty for a year, should any issues arise. Establishing practices of use within the library has also been easy. Library staff and TLC are in regular communication to prove and uphold norms and best practices.

The Leslie J. Savage library is the ideal location on campus for a sustainable solution like the portable dishwasher initiative. Academic units do not have a high volume of events that serve food during the year. So even though it was affordable, units may not be able to justify the expense of a portable dishwasher. However, spaces in the library and the TLC are open for people across campus to reserve and host events. So even if other units do not adopt the model outlined in this case study, the library and the TLC can increase this initiative's impact by hosting low- and zero-waste events for any campus unit that would like to take part. The TLC piloted this model with two end-of-year events, serving approximately 70 people across all academic units between the two.

Conclusion

Recognizing the environmental impact of waste-heavy event practices, Leslie J. Savage Library collaborated with the Teaching and Learning Center (TLC) to develop a

sustainable alternative. The goal was to significantly reduce disposable waste associated with library and TLC-sponsored events while keeping food safety and operational efficiency. Through discussions, both departments showed a critical gap in their ability to host low-waste events: the lack of an efficient, hygienic way to clean reusable dishes.

To address this, Leslie J. Savage Library and the Teaching and Learning Center secured funding from Western's Sustainability Action Committee and the TLC's budget to buy a portable dishwasher. With guidance from Campus Operations, the unit was installed in the library's staff lounge, ensuring accessibility for events held in shared library spaces. The LEAD Sustainability office donated reusable plastic plates and flatware to replace single-use dishware. With these resources in place, the library and the TLC implemented a standardized system for food-related events: hosts would replace disposable tableware with reusable dishes, attendees would be encouraged to appropriately recycle beverage containers (such as aluminum cans and glass bottles), and hosts would clean all used dishware in the portable dishwasher rather than discard or handwash.

Since implementing this event-hosting system, the TLC and library have dramatically reduced event-related waste while modeling sustainable practices for the broader campus community. The library, in partnership with the TLC, has reinforced its role as a leader in campus sustainability by showing that simple, cost-effective changes—such as investing in reusable dishware and streamlining cleanup—can lead to measurable environmental benefits. Moreover, this initiative highlights the power of cross-departmental collaboration in solving practical sustainability challenges, setting a precedent for future partnerships to reduce the campus's environmental footprint.

Tiffanie Wick <twick@western.edu>, Director of Library Services, Western Colorado University, Gunnison, Colorado, United States.

Kimberly Yadon <kyadon@western.edu>, Director of the Teaching and Learning Center Western Colorado University, Gunnison, Colorado, United States.

References

- Beutelspacher, L., & Meschede, C. (2020). Libraries as promoters of environmental sustainability: Collections, tools and events. *IFLA Journal*, 46(4), 347–358. <https://doi.org/10.1177/0340035220912513>
- Danby Products, Inc. (2024). *Owner's manual*. https://cdnns.danby.com/4973611/DDW1805EWP_EFS_20241217.1813689.pdf
- Findler, F., Schonherr, N., Lozano, R., & Stacherl, B. (2019). Assessing the impacts of higher education institutions on sustainable development—An analysis of tools and indicators. *Sustainability*, 11(1), 59. <https://doi.org/https://doi.org/10.3390/su11010059>
- Leal Filho, W., Wu, Y.-C. J., Brandli, L. L., Avila, L. V., Azeiteiro, U. M., Caeiro, S., & Madruga, L. R. D. R. G. (2017). Identifying and overcoming obstacles to the implementation of sustainable development at universities. *Journal of Integrative Environmental Sciences*, 14(1), 93-108. <https://doi.org/10.1080/1943815X.2017.1362007>
- Northeast Recycling Council, Inc. (2006). *Best management practices guidebook for special event-generated waste in rural communities*. Northeast Recycling Council, Inc. https://deq.mt.gov/files/Land/Recycle/Documents/pdf/Special_Event_BMPs_FIN AL.pdf
- Singh, P., & Mishra, R. (2019). Environmental sustainability in libraries through green practices/services. *Library Philosophy and Practice (e-Journal)*. <https://digitalcommons.unl.edu/libphilprac/2312>
- Stephens, J. C., Hernandez, M. E., Román, M., Graham, A. C., & Scholz, R. W. (2008). Higher education as a change agent for sustainability in different cultures and contexts. *International Journal of Sustainability in Higher Education*, 9(3), 317–338. <https://doi.org/10.1108/14676370810885916>
- Tanner, R., Aldrich, R. S., Antonelli, M., & Ho, A. K. (2019). Libraries as sustainability leaders: ALA's Special Task Force. *Portal: Libraries and the Academy*, 19(3), 365–374.
- United Nations. (n.d.). *Goal 12: Responsible Consumption and Production*. United Nations Sustainable Development Goals. <https://www.un.org/sustainabledevelopment/sustainable-consumption-production/>
- Waas, T., Verbruggen, A., & Wright, T. (2010). University research for sustainable development: Definition and characteristics explored. *Journal of Cleaner Production*, 18(7), 629–636. <https://doi.org/10.1016/j.jclepro.2009.09.017>
- Žalėnienė, I., & Pereira, P. (2021). Higher education for sustainability: A global perspective. *Geography and Sustainability*, 2(2), 99–106. <https://doi.org/10.1016/j.geosus.2021.05.001>