Teaching with trash: archaeological insights on university waste management

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Abstract

The archaeological study of modern trash on an American university campus can yield valuable insight into how both human and environmental processes contribute to the accumulation and distribution of litter. The Campus Trash Project, run by the University of Idaho, utilizes archaeological methodologies to evaluate the effectiveness of university waste management policies designed to curtail litter on campus. As this case study illustrates, the discipline of archaeology can make significant contributions to the reduction of campus trash while providing students with the necessary practical skills required to become professional archaeologists upon graduation.

Keywords

Trash; campus archaeology; waste management; teaching pedagogy.

It is 5am on the University of Idaho’s campus and after a long night of partying, two first-year undergraduate roommates are busily cleaning up their dorm room; it is Family Day on campus and both women are expecting their parents in a few hours. They dump a heap of used bottles, paper plates and napkins into the massive, rectangular bins that sit behind their dormitory. Because the bins’ lids are incredibly heavy, their entire dorm always leaves them open. Winds pick up thirty minutes later, tossing the women’s lighter trash across the green lawn, creek and street surrounding the dormitory’s perimeter.

A few hours later, a senior basketball player exits the campus’ new recreation facility after a long, coach-induced workout. Too tired to walk to the trashcan 20 feet away in the blustery winter day, he makes like the basketball player he is and aims his empty plastic water bottle...
at the can’s opening. His shot is slightly off by a few feet, and the bottle tumbles into an ecologically sensitive watershed below.

At the center of campus, a PhD candidate is nervously awaiting her thesis defense. She sits outside the University of Idaho’s library flipping through her copious notes while smoking dozens of cigarettes. She disposes of the cigarette butts in a four-foot high tan metal tube in the planter behind her, which campus facilities personnel fondly term ‘butt pipes’. Halfway through her cigarette pack, she discovers the ‘butt pipes’ are full. She lets the remaining cigarette butts fall to the ground, forming an anthill shaped pyramid of butts next to her feet.

Introduction

Campuses are epicenters of trash accumulation. From the most minute forms of waste (cigarette butts, gum wrappers) to objects that are easily recognized by campus officials as trash (beer bottles, plastic cups), university campuses generate as much litter as the cities and townships in which they are centered. Campus events, parties and academic research produce an unruly amount of waste that is cause not only for environmental concern but also for significant budgetary problems, especially in an age of economic crises. Universities, such as the University of Idaho in Moscow, Idaho, have responded to the problem of litter by funding permanent positions (‘Sustainability Coordinator’) and centers (‘Sustainability Center’) aimed at reducing the amount and cost of cleaning up waste on campus (for additional examples of campus sustainability efforts, see Austin et al. 1993; Keniry 1995; Lounsbury 1998; Mason et al. 2003). While these initiatives have advanced the University of Idaho’s understanding of trash on campus, they often focus on the macroeconomics of the issue and consequently neglect the quotidian, everyday human and environmental processes noted in the above vignettes that contribute to the massive accrual of trash.

The University of Idaho’s ‘Campus Trash Project’ was developed with this specific lacuna in mind. As Rathje (Rathje and Murphy 1992) and a number of other sustainability- and conservation-minded anthropologists have illustrated (Hayashida 2005; Lucas 2002: 14), studying the archaeology of prehistoric, historic and contemporary trash practices has the potential to impact modern environmental and waste management policies. Anthropological and archaeological methodologies provide a new lens through which the deposition of trash can be understood and, more importantly, mitigated. Participant observation, interviewing individuals who live on and work at the University of Idaho and systematically mapping, collecting, cataloging and interpreting waste yield new insight into why and how trash is disposed of on campus. Moreover, the Campus Trash Project can be undertaken at other campuses, allowing instructors and professors of university and junior college courses to integrate practical archaeological fieldwork experience into their introductory archaeological seminars. The pedagogical advantages of studying and teaching with trash, however, go beyond teaching basic archaeological skills to students. The Campus Trash Project encourages students to think critically about broader issues of environmental degradation and to use archaeological techniques to help reduce litter on university campuses.
The University of Idaho Campus Trash Project: justification and methodologies

The University of Idaho and the surrounding community of Moscow is a relatively isolated microcosm that spans approximately six miles of the Palouse region of Northern Idaho. The university employs 3800 staff and faculty members and has a student body of 11,791, most of whom reside in Moscow (University of Idaho 2010). The city of Moscow has a population of 21,700, with the majority of its residents either working and/or taking courses at the University of Idaho. Campus trash-reduction efforts therefore have the potential to impact on both the campus community and the city at large.

Previously conducted studies of trash in the region note a discrepancy between waste management practices in Moscow, on the University of Idaho’s campus and across the state of Idaho. Nineteen per cent of all waste on campus is recycled, whereas only 11 per cent of the city of Moscow’s recyclable trash is recycled (Nagawiecki 2009: 5). The entire state of Idaho, where a meager 8 per cent of all trash is recycled, trails even further behind Moscow and the University of Idaho. This suggests that on-campus recycling initiatives such as the University of Idaho’s Sustainability Center are having a potential impact on recycling behaviors in Moscow and at the University of Idaho. The state, the campus and Moscow still fall short of the national recycling average in the United States, which is 25 per cent (Nagawiecki 2009: 5). This points to a need for implementing additional creative measures to reduce waste and encourage recycling in the Palouse region.

Past waste-minimization education efforts have included initiating recycling contests between on-campus dormitories and sorority and fraternity houses, organizing sustainability conferences and speaker series on campus, and having the campus Sustainability Coordinator give talks in classrooms and in student housing (Dakins et al. 2006). University dumpsters and trash bins have also been sorted and the economics of trash expenses have been analyzed in an effort to identify the amount of unrecycled trash and the money such negligence is costing the University of Idaho (Nagawiecki 2009). Reports assessing the amount of trash at the University of Idaho emphasize the important role participatory education plays in reducing litter on campus, yet most of the recycling outreach programs are temporary in scope (one-day teach-ins, one-month recycling contests, one-hour lectures on the topic, etc.) and do not require a sustained effort to integrate recycling into one’s everyday life.

Archaeological methodologies have exposed the mundane, daily human and geomorphic processes that contribute to the dispersal of litter across the University of Idaho’s campus. The Campus Trash Project began in the 2008 fall semester as a class assignment for both undergraduate and graduate students enrolled in the Department of Sociology and Anthropology’s upper-division Archaeological Methodologies and Theory course. The project’s intended goals and learning outcomes included: teaching students archaeological methodologies and theories by having them engage in hands-on research; teaching students teamwork; fostering a sense of personal responsibility for one’s immediate environment; and informing future recycling and trash education outreach efforts on campus by analyzing data sets collected through this research project.

The project was broken down into small, manageable components with deadlines spread evenly throughout the semester. This teaching strategy ensured that students were keeping up with the project. During the first week of the class, students were given an overview of
the project’s goals. As a class, we discussed what areas of the campus (what we would later term ‘zones’) were in need of litter clean up and then spent an afternoon together performing a reconnaissance survey of the campus to get a better sense of where trash was the most pronounced. After we collectively identified four trash-ridden zones on campus, four student groups – two undergraduate and two graduate – were formed and assigned one zone each. These zones included an area surrounding the campus’ student recreation center, a sitting area and quad in front of the university’s library, an alley lining the sorority and fraternity houses, and the football stadium’s parking lot that is used as a pre- and post-game party area (also known as, and will be referred to for the rest of the article as, a ‘tailgating area’). Before beginning artifact collection, students were given maps of their zones courtesy of Ben Camp, the University of Idaho’s CADD Center Manager (Fig. 1). Students were instructed on how to measure out and map features that were not included on campus maps, including trash bins, parking bumps and port-o-potties (‘portaloos’) using hand-held GPS units.

After students completed maps of their zones, they were taught how to do a surface collection of trash as well as how to map and plot each artifact found in their zone. All artifacts were placed in archival-safe bags and labeled with their spatial coordinates, appropriate zone number, the name of the student who collected the item and the date of collection. Students were expected to apply their knowledge of ethnographic field research and ethnoarchaeology by both observing and interviewing the students, faculty and staff members who utilize their zones. At the end of the semester, students were given detailed instructions on how to write and prepare a final report with a structure similar to an archaeological site report. In an effort to share our information with the entire campus community, a research blog (http://campustrash.wordpress.com) was established where students could post their findings and observations.

Figure 1 Trash ‘zones’ on the University of Idaho’s campus: 1) the football tailgating parking lot, 2) the student recreation center, 3) the library quad and 4) an alley lining sorority and fraternity houses. Image: courtesy of Ben Camp.
students posted updates on their project’s progress. The semester concluded with student presentations, which were attended by campus administrators, anthropology students and the students’ friends and family members.

Teaching through trash: pedagogical goals and research findings

A common theme that runs through archaeological studies of the recent past is their linkage between archaeological data and changing or aiding modern societal issues. Whether it is through exposing the foundations and underbelly of capitalism and its continued impact on today’s global society (cf. Leone 1981; Orser 1996, 2010) or investigating human rights violations, genocide or the archaeology of war to resurrect, recollect or reconcile the tragedies of the recent past (Buchli and Lucas 2001; Crist 2001; Schofield 2002), studies of the here and now have the potential to make real measurable changes to world at large. This is certainly true of the Campus Trash Project and other projects like it. How we go about making this change rests almost entirely on the shoulders of educators and instructors of archaeology. This is why it is crucial that archaeologists reflect critically upon how they communicate the importance of archaeology as a discipline to the individuals with whom they typically spend the most time: students. Though some headway has been made (Beck and Balme 2005; Bender 2000a, 2000b; Bense 2000; Burke and Smith 2007; Casana 2009; Conkey and Tringham 1996; Hamilakis 2004; Holtorf 2001; Lipe 2000; Perry 2004; Pluciennik 2001; Rainbird and Hamilakis 2001; Schudlenrein and Altschul 2000; Walker and Saitta 2002; Wood 2002), we must continue to think about how we can equip students with the critical thinking skills necessary to make complex ethical and policy-oriented decisions regarding the material past and, in the case of the Campus Trash Project, contemporary waste.

Educational theorists (cf. Barnes 1992; Bringle and Hatcher 1996; Kolb and Kolb 2005; Stanton 1987) generally agree that students learn best when putting classroom knowledge and academic theories into practice. Participatory and service-oriented learning is especially crucial in environmental education, where students can observe on-going trash accumulation and other ecological degradation issues themselves and in their own communities (Heinz Family Foundation 1995: 16; Palmer 1998: 268). The fieldwork component of archaeology makes the discipline uniquely suited to incorporating participatory learning models into the coursework curriculum.

Besides creating a more civically engaged citizenry, embedding experiential opportunities into coursework offered during the traditional academic year (fall and spring semester or autumn, winter and spring quarters) allows students on the margins of academia to partake in archaeological fieldwork. Many students are unable to participate in field projects because they have family and/or work obligations during the summer months (Perry 2004: 248). Some students also find it difficult to secure financial aid during the summer semester or quarters to fund a field school. As one student noted in an article on the project, ‘It was a lot of fun because most often in archaeology classes, you can’t do fieldwork. Usually there aren’t artifacts on campus, and we don’t have the funding to go to archaeological sites. Here, we are using garbage as artifacts’ (University of Idaho 2008). Limiting practical archaeological fieldwork opportunities to the summer months thus
creates a vicious cycle of exclusion in which students who are already underrepresented in the field of archaeology are repeatedly under-served. The Campus Trash Project provides a solution to this problem by incorporating archaeological fieldwork as part of a course, which is offered every fall semester.

The Campus Trash Project’s students used their archaeological research to make suggestions about the directions environmental management must take in order to minimize the accumulation and impact of trash on campus. In the library quad, students found an unexpected amount of cigarettes and cigarette butts (864 artifacts total). After mapping and cataloging hundreds of cigarette-related fragments, students questioned why cigarettes were being found in a location that, unlike other places on campus, had several dedicated cigarette ‘butt pipes’ for cigarette waste disposal (Plate 1) in its vicinity. After developing a participant observation survey that ensured group members were systematically recording the same data, the student group observed that library quad cigarette smokers did not utilize the clearly demarcated ‘butt pipes’ even if they were sitting directly next to them. Here, both ethnographic methodologies (participant observation) and archaeological methodologies (mapping and artifact collection) elicited human behavioral responses that went unnoticed by campus planners responsible for the installation of these ‘butt pipes’.

Another small-scale archaeological study of trash on an American university campus (University of Louisville, Kentucky) similarly found that ‘smoking paraphernalia and fast food packaging constituted the largest litter categories’ (Stottman et al. 2007: 192). In this case study, ‘students suggested that installing more litter receptacles and emptying existing litter receptacles more often would help combat the litter problem in the study area’ (Stottman et al. 2007: 192). The Campus Trash Project’s observations demonstrate that different measures must be taken. Rather than wasting time, money and campus staff time on installing, maintaining and regularly emptying ‘butt pipes’ that are relatively ignored, focus must be directed at changing attitudes about what constitutes trash; the group thus proposed education and outreach (such as signage and handouts) as a solution. It was only

Plate 1 Butt pipes and trash cans blending into the landscape in front of the University of Idaho’s library. Image: courtesy of James Knobbs, Daniel Carlini and Tim Mace.
through the systematic recording of cigarette waste that the need for human rather than architectural intervention became apparent.

The football tailgating parking lot presents the biggest waste management challenge at the University of Idaho (Plate 2). Hundreds, sometimes thousands, of cups, beer and wine bottles and food-related artifacts end up in the parking lot – a lot used every day by the university’s students – before and after football games. Over the course of the semester, the group divided the lot into quadrants for which each group member was responsible (Fig. 2). As a group, the students collected a total of 388 artifacts and a startling 76 per cent (298 objects) of the artifacts were categorized as pertaining to alcohol consumption; such artifacts included bottle caps, bottle fragments, drink containers and pull-tabs. As with the installation of ‘butt pipes’ near the library quad, trash-reduction measures have failed to quell the exponential growth of waste in the tailgating zone. New strategies put in place right before the instigation of the Campus Trash Project, which involved handing out plastic bags to all vehicles entering the tailgating lot, failed to produce the intended results.

By dividing the lot into discrete quadrants and counting and mapping the amount of people, trash, and dumpsters occupying each quadrant during tailgating events, students were able to pinpoint high trash volume areas in the tailgating zone (Fig. 2). The issue of its inhabitants’ altered, intoxicated state, however, complicates waste management in this zone. One tailgating group member jokingly suggested turning trash disposal into a game by placing a basketball hoop over the top of a dumpster bin, raising the question of ‘how can we transform the behaviors of intoxicated litterbugs’. The same group member proposed ‘designating specific spots to each vehicle entering the tailgating lot’. This way, individuals could be fined if they left trash in their assigned area. The location, size and color of the dumpsters in this zone also appeared to contribute to trash build-up. Grey-colored dumpsters, like the cigarette butt pipes and trashcans in the library quad, disappeared into a sea of cars and gravel and were placed lining the perimeter of the lot.

Plate 2 Trash in the student parking lot after a University of Idaho tailgating party and football game. Image: courtesy of Stuart Robb, Parking Services Supervisor.
rather than in the center of it (Fig. 2). As one student explained, dumpsters placed in the tailgating area are ‘much smaller than the cars, and as such, impossible to find once one has entered the crowd of tailgaters’. This student’s solution was either to place the dumpsters in the same location at every game or to place identifying markers, such as flags, that could be seen from across the entire parking lot. As another student emphasized, ‘receptacles must be flashy and inviting . . . subtleties are lost on intoxicated individuals’.

On the other side of campus, students made equally significant discoveries that will hopefully contribute to the reduction of trash in a creek (‘Paradise Creek’) and swale directly outside the student recreation center (Plate 3). In this zone, the group initially hypothesized that trash accumulated in the creek was the result of students littering when entering and exiting the student recreation center. After hours of participant observation on different days of the week and at all times of the day as well as mapping trash scatters

![Figure 2](image-url)
along the creek, students realized that the trash in the ecologically sensitive creek came from three student housing dumpsters located directly across the street from the student recreation center. The students noted that the dumpsters’ lids were left open on a regular basis. On windy days, trash from the usually overflowing dumpsters was blown and deposited into the creek. The student group proposed solutions to this problem that included posting laminated signs alerting dormitory residents to keep the dumpster lids shut, creating brochures to be circulated among dormitory residents detailing the findings of the Campus Trash Project and securing chains to the dumpsters that would make it difficult for the lids to flip completely open.

Conclusion

The apparent similarity between trash signatures at the University of Idaho and the University of Louisville illustrates the pressing need for future research on campus trash: not solely for its pedagogical applications but also for the information it can yield on the effectiveness of waste management policies when they are observed in practice. Both archaeological projects have identified a disjunction between the envisioned and actual waste practices of campus users. If individuals do not dispose of cigarette-related waste in an empty, clearly marked pipe literally one foot away from them, what is the use of installing additional cigarette receptacles? And if football fans partying in the tailgating parking lot ignore the trash bags handed to them and continue to toss beverage cups and beer cans on the ground, how would moving dumpsters closer to where their festivities are taking place or purchasing more dumpsters remedy the trash problem? Campus planners must take into account the unpredictability of human behavior so aptly captured by the Campus Trash Project’s findings and construct more radical plans of action when it comes to modifying approaches to reducing trash on campus. One answer is to push for the extension of product life spans (Cooper 2005), which can begin with
banning plastic cups on campus and replacing them with reusable ones. Campuses might be just the right testing ground for new waste policy implementation; macro-scale change needs to be tested in a micro-scale environment in order to demonstrate its feasibility. Redclift concurs, writing ‘we cannot begin to “manage” the environment successfully at the global level without first achieving progress towards sustainability at the local level’ (1996: 1). It is here where archaeological research, such as mapping and artifact collection, can intervene and make significant contributions to the development of new long-term university and perhaps even national waste management policies.

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Note

1 Note that trash is defined here as any object that is picked up by campus facilities staff and labeled as negatively impacting the aesthetics and/or ecological habitats of an environment, but that what constitutes waste varies across cultures (Drackner 2005; Reno 2009).

References


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