

## **Title**

The Implications and Impressions of Recycling in Massachusetts; How Local History and Observations can Increase Suitability

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## **Abstract**

Considering the multitude of climate crises evolving daily, many initiatives designed to reduce carbon emissions, CFC emissions, grazing land, deforestation, and pollution have all been enacted in numerous ways. In this research, our group is furthering the imitative of reducing pollution by investigating local recycling habits and their history in the state of Massachusetts. With a later application for international use, our group will be studying how recycling has developed and is maintained, what average people know about the process of landfilling and recycling, how those who recycle manage climate anxiety, and how land use patterns today emulate or differ from Indigenous peoples use. To gather this data, we will travel and make multiple visits to coastal areas and islands, such as New Bedford or Nantucket. In these areas, we will observe recycling habits, discuss recycling and personal sustainability with local populations, tour and investigate local recycling and waste management centers, interview staff at such centers, and potentially discuss land use with Indigenous communities. This team research is following a stint of solo, student-lead research about the potential implementations of recycling on the Pacific Island of Tuvalu. All this data will then be compiled for use in developing a GIS software of Massachusetts recycling facilities, expanding general knowledge about these misconceptions of recycling, and for later use in implementing recycling programs on islands with the potential to address the ongoing issues of climate-driven migration and refugees.

## **Background, Objectives/Outcomes**

The research on Massachusetts and ethical recycling is contingent on a semester long stint of anthropological archival research and interviews about the island of Tuvalu which was later presented at the Bridgewater State University Midyear Symposium by California Muratore. The current crises the island nation is facing as climate change rapidly manifests into catastrophic events includes increased coastal erosion, increased salination, a rise in sea level (significant considering the island is only 4.57 Masl), and increased occurrences of cyclones (Sauni 2002). All this combined has one prominent factor that stands out to us, a continued limitation of space with a continued increase in population. Ms. Muratore had reached the conclusion that waste management is an upcoming and soon to be prominent issue Tuvalu will face as population increases and space decreases. This can lead to severe consequences such as the impending possibility of Tuvaluans becoming the world's first climate refugees. Many island nations have already prospected other areas to live in preparation for such a diaspora. This is significant as many island cultures, such as Tuvalu, have a strong cultural connection to their land. In an attempt to mitigate the challenges, she has resolved that implementing early waste management and recycling systems and materials related to circular economy can ease this problem. Implementing waste management systems that are cohesive and ethical can help reduce the amount of trash needing to be landfilled offshore, better organize the land use of Tuvalu, stimulate the job economy of the country, and produce an environment conducive for circular economy. Circular economy is a production process in which products are created as sustainable and, at the end of their initial use, can be reused again or easily broken down to ensure a minimal waste cycle (Ellen Macarthur Foundation 2017). The idea is to embody the law of nature in that there is no waste, at every level an organism can use the materials. However, before being able to organize and implement such a significant and technical system, we as a group need to investigate and comprehend local recycling.

Objectives of this project include to understand recycling in the local Massachusetts areas to later apply to a broader range of nations, especially those in coastal regions. Students (with guidance from mentors) intend to travel to local recycling plants and shorelines to observe recycling behaviors. The team also hopes to gauge the feelings of climate anxiety experienced within different populations. Some of the questions provoked by this research include: Is recycling a coping mechanism or an active role people take to reduce the impacts of climate change? How much more influential is recycling compared to the promotion of reducing quantities consumed and reusing items, such as clothing, bottles, or bags? Who were key individuals and cities providing initiatives for sustainability and recycling locally? How do indigenous peoples' traditional land use and sustainability practices correspond with current uses and sustainability in the Massachusetts area? Can more be done to develop local recycling as there are many regulations that cause "recycled" materials to be landfilled?

Many communities and schools utilize sustainability initiatives such as placing recycling bins in classrooms and public areas only to incorporate them into regular waste bins. This eases the anxiety some may feel about waste

management while achieving nothing. Gathering data on occurrences such as this can also help local sustainability on the campus of Bridgewater State University. Alongside investigating the processes and personal thoughts associated with recycling and circular economy, we also hope to compile data in partnership with local recycling facilities within the Massachusetts area to create a GIS software usable by those with an interest in sustainability but who are unsure where to start. As the research increases, we hope to develop the GIS to be more inclusive of other states and later other nations. Once applicable, we hope to include the facilities of Tuvalu as well, but that is a long-term goal. There are many academic sectors involved in this research, such as environmental and cultural anthropology, geography, history, and sustainability. These are all highlighted by the key questions we are seeking to answer above. Our team's methodology is to start with archival research about the history and continued processes of sustainability in Massachusetts during the spring semester.

Following this research, we hope to visit places including New Bedford as it is a coastal area home to a recycling department and a solid waste transfer station, Chatham as it is a coastal location with a small population, making it a good mimicry for an island like Tuvalu, Manchester-by-the-Sea as it is near a coastal area and has composting stations, and other littoral areas in Massachusetts. Of these places, New Bedford will be visited several times to thoroughly investigate the coastal areas, waste facilities in the city, and indigenous land use. Students will also have the potential of visiting Martha's Vineyard or Nantucket, depending on COVID regulations, and this would be insightful regarding how recycling is managed in an island setting. If visiting an island, multiple visits would also be preferred for an encompassing understanding.

Regarding a schedule, the 2022 spring semester will feature one student doing archival research on sustainability practices and initiatives commonly engaged by Massachusetts's residents and understanding GIS software to be utilized after data comprehension. A second student will be investigating the history of native land use and how sustainability practices have changed over time. The second student will also be investigating how coastal living impacts sustainability. Both students will create interview questions to be asked during the fieldwork done during the summer. In the summer session of research, our time will be devoted to doing various fieldwork, such as visiting the sites listed above, starting with New Bedford. Students will contact local recycling plants to request tours and interviews to get a comprehensive idea of how the process works. Other days they will simply observe the waste habits of local populations and ask for interviews with random participants. If traveling to islands on the Massachusetts coast is permitted, the dates and tickets will be purchased early in the summer of 2022. Students and professors will get together to discuss the observations and interpret the data so it will be more easily documented. Professors will also guide students in questions to ask and other ways to engage with the community in sustainable ways. After traveling to multiple locations and committing hours of time to interviews and observations, the data will be turned into a GIS software and running document to be utilized for other research stints. The research will be presented at Bridgewater State Symposiums and sustainability events. The GIS software will be made accessible for all of those on the BSU campus and Massachusetts areas who would like to better manage technological, plastic, and other forms of harmful waste.

### **Interdisciplinary of the project**

There are many academic sectors involved in this research, such as environmental and cultural anthropology, geography, history, and sustainability. These are all highlighted by the key questions we are seeking to answer above.

### **Methods**

Our team's methodology is to start with archival research about the history and continued processes of sustainability in Massachusetts during the spring semester. Following this research, we hope to visit places including New Bedford as it is a coastal area home to a recycling department and a solid waste transfer station, Chatham as it is a coastal location with a small population, making it a good mimicry for an island like Tuvalu, Manchester-by-the-Sea as it is near a coastal area and has composting stations, and other littoral areas in Massachusetts. Of these places, New Bedford will be visited several times to thoroughly investigate the coastal areas, waste facilities in the city, and indigenous land use. We also think the potential of visiting Martha's Vineyard or Nantucket, depending on COVID regulations, would be insightful regarding how recycling is managed in an island setting. If visiting an island, multiple visits would also be preferred for an encompassing understanding.

### **Role of student, Activities and Timeline**

Regarding a schedule, the 2022 spring semester will feature at least one student doing archival research on sustainability practices and initiatives commonly engaged by Massachusetts's residents and understanding GIS

software to be utilized after data comprehension. Using the material learned in these courses and material one student will learn in courses such as introduction to sustainability and introduction to geographic information systems, and analyze data in an anthropologic context and present it in a GIS program. Another student will be investigating the history of native land use and how sustainability practices have changed over time. They will also be investigating how coastal living impacts sustainability. Both students will create interview questions to be asked during the fieldwork done during the summer, which will require IRB approval. In the summer session of research, their time will be devoted to doing various fieldwork, such as visiting the sites listed above, starting with New Bedford. Students will contact local recycling plants to request tours and interviews to get a comprehensive idea of how the process works. Other days we will simply observe the waste habits of local populations and ask for interviews with random participants. If traveling to islands on the Massachusetts coast is permitted, the dates and tickets will be purchased early in the summer of 2022. Students and professors will get together to discuss the observations and interpret the data so it will be more easily documented. Professors will also guide students in questions to ask and other ways to engage with the community in sustainable ways.

### **Dissemination of the proposal results**

After traveling to multiple locations and committing hours of time to interviews and observations, the data will be turned into a GIS database and running document to be utilized for other research stints. The research will be presented at Bridgewater State Symposiums and sustainability events. The GIS data will be made accessible for all of those on the BSU campus and Massachusetts areas who would like to better manage technological, plastic, and other forms of harmful waste.

### **Relevant experience of both faculty mentors**

Faculty mentors are from Geography and Anthropology department. Navid Fozi has been working with students for over a year on different aspects of this project, including global governance, human right, cultural adaptation, and globalization. James Hayes-Bohanan has been engaged with Sustainability Program and has extensive experience taking students on local field trips, such as to New Bedford, Cape Cod and Brockton. It is anticipated that students who have worked with the professors in the past or have had classes with them will apply for this opportunity.