



**Single use plastics;
consumption patterns and
recycling behaviors on the
University of New
Hampshire Durham
campus.**

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ING YOUR OWN



UNH Sustainability

- Zero Waste Task Force

2013: UNH switches to single stream recycling

- **Office of Sustainability**

- 2017 UNH earns STARS Platinum rating from the Association of for the Advancement of Sustainability in Higher Education (AASHE)

Student Environmental Action Coalition

Issue campaigns including: Zero Waste, Ban Plastics, speakers



University joins fight against plastic, vows to rid campus of straws



Recycling at UNH



What plastics can be recycled?

- #1
- #2
- #5



No plastic bags

Putting plastic bags in the recycling is not allowed. To recycle plastic bags properly, bring them to a grocery store bag station.



Rinse then recycle!

Give your recyclables a quick rinse to make sure they are free from



What else can be recycled?

- Cans
- Aluminum
- Paper
- Cardboard
- Inability



Wildcats know that creating less waste is the best way to work towards a zero waste community.

That's why we're committed to increasing our use of reusable items - bottles, bags, straws and more.



"Every day is a great day to live zero waste."

**THANK YOU, GRADUATES!
YOU'VE MADE UNH ONE OF THE MOST
SUSTAINABLE UNIVERSITIES IN THE COUNTRY.**

But... the messages seem mixed/garbled

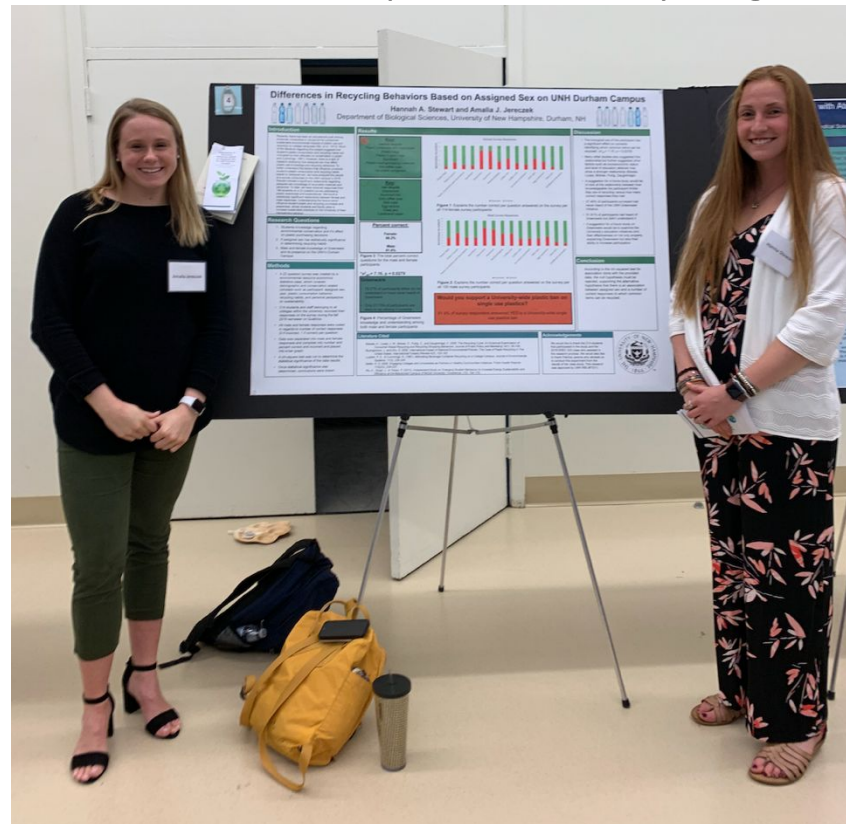


UNH's Recycling Crisis:
An Assessment of Recycling Knowledge in Relation to Behaviors

What we did:

A student led initiative to explore how “sustainable” the UNH community is looking at:

- A) How effective the UNH Initiatives were to support their “Sustainability’ claim
- B) Evaluate the awareness, consumption, and recycling habits of plastics on campus



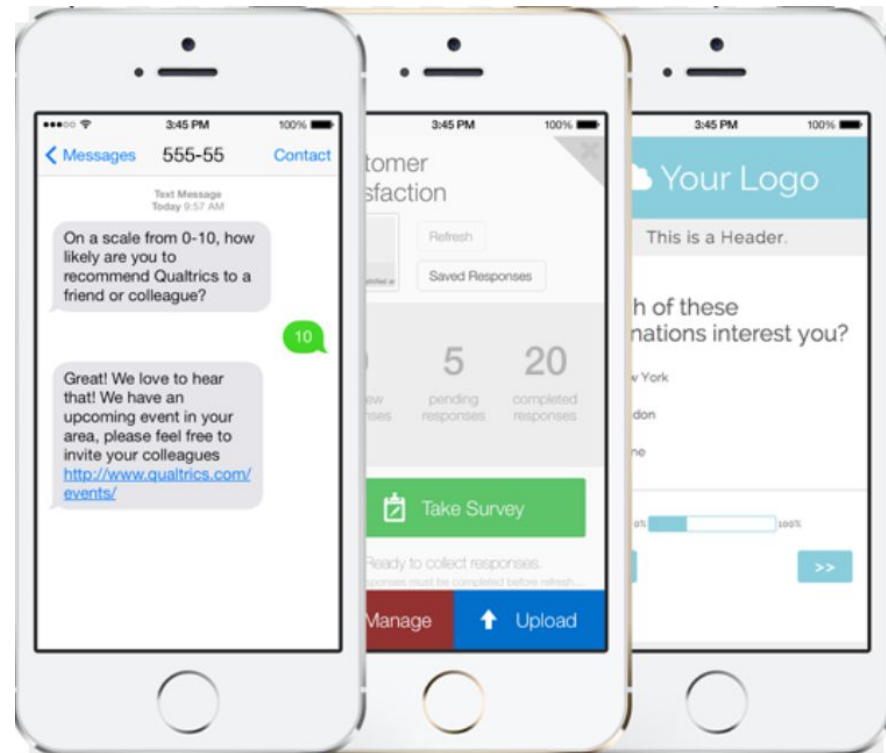
How we went about it:

Developed and Used Student led "Intercept" Surveys during:

A) Fall 2016, 2017-focus on use of water bottle filling stations

B) Fall 2018- focus on plastic consumption and recycling

*Methods and sample sizes were consistent each year- Sample size ~ 200 students, faculty, staff each year



UNH Initiative : Water Hydration Stations

Helped eliminate waste

00021296

•~Summer 2010, UNH began to replace/install Water Hydration Stations in all buildings that were being renovated with the first WHS installed at UNH's main dining facility.

•Since 2010- UNH has installed ~100 water hydration stations across campus buildings, residence halls, campus recreation buildings.





Water Hydration Stations

What We Asked:

- a) Do you have a re-fillable bottle
- b) What size is it
- c) Estimate how many WHS locations on campus

Water Hydration Stations What We Found:

Survey Year	16.9oz bottles conserved (weekly average)	Sample size
2016	10.8	182
2017	9.8	196
2018	13.1 *	203

2018 significantly highest use of water stations (p 0.02)



On average, individuals on campus conserve 11-13 (16.9) water bottles a week.

Following WHS findings, looked at Consumption of single use plastics next.

We Asked:

For each item listed below, estimate the number of times you purchase the item on a weekly basis.

Single Use Plastic Items

Hot coffee cup

Iced coffee cup

Coffee cup lids (hot, cold)

Plastic take out container

Pizza box

Solo cups

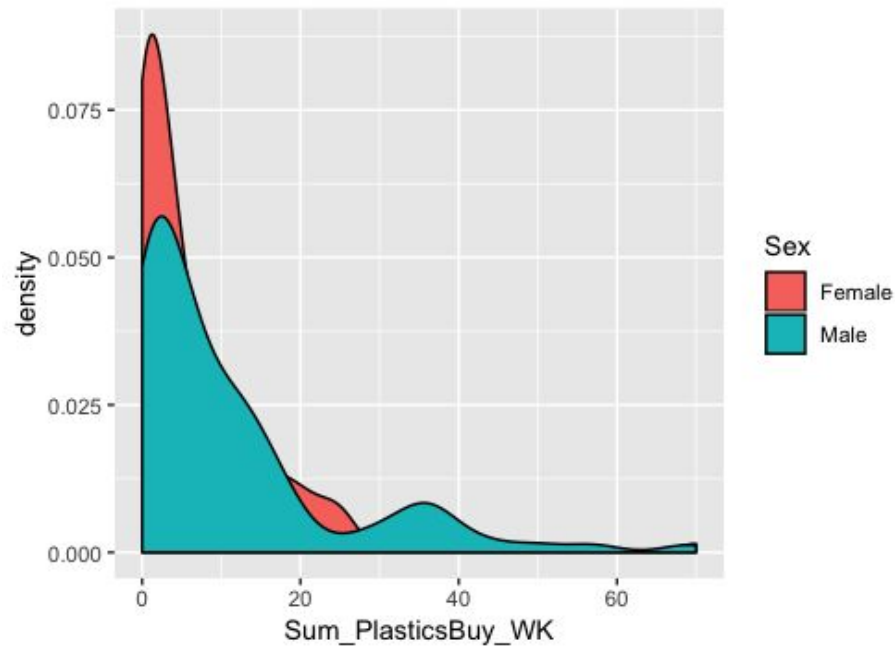
Plastic bottle (water, juice)

Plastic Silverware

Straws

Following WHS findings, looked at Consumption of single use plastics next.

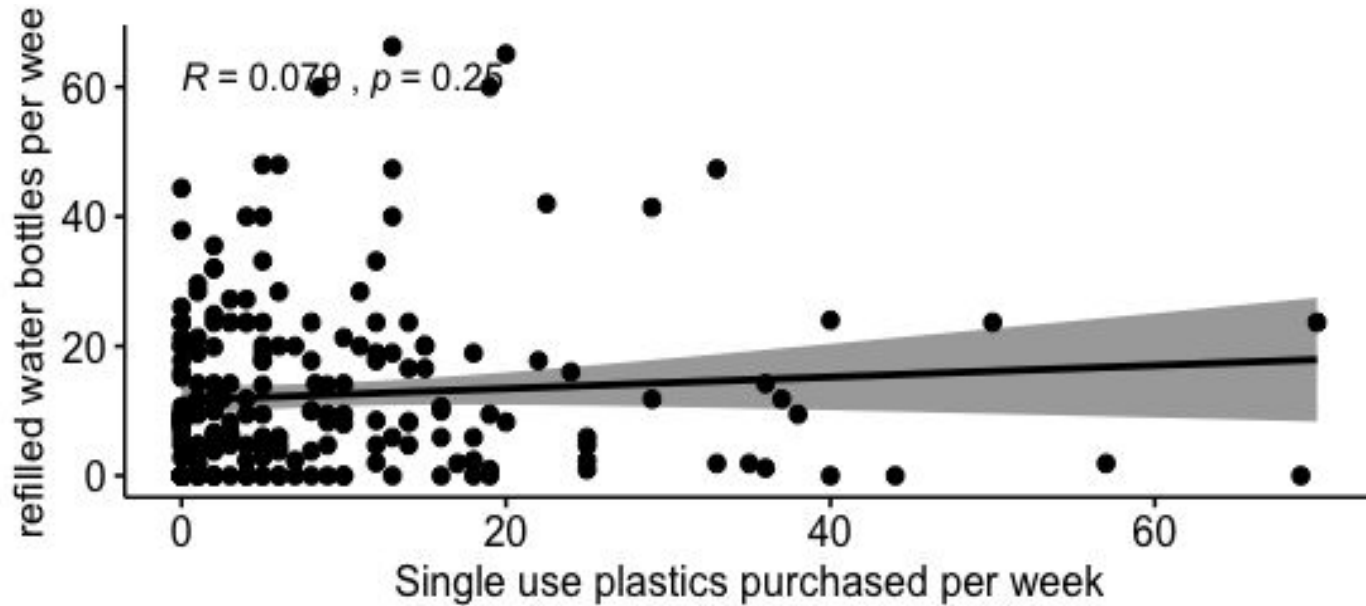
We Found:



Females Average = 6.7 Males = 11

$T_{(212, 0.05)} = 2.66, p = 0.008$

Relationship Between Conserving Plastic Bottles and Purchasing Single Use Plastics



Single-Stream Recycling Guide

You can now place all recyclables in one bin!

♻️ Plastic Containers (no #7 PLA composite, no foam, do not)



NEW: Recycle plastic screw-top caps on EMPTY plastic containers



Empty and rinse all containers. Do not flatten containers.

Please follow these guidelines carefully!

Questions

Please contact:

Facilities Call Center
603-862-1437

<http://www.thinkgreen.com/recycling>



UNH Initiative: Single Stream Recycling: Recycling Behaviors

• We Asked:

- Do you know how and what to recycle
- Do you support a campus-wide ban on Single use Plastics (SUP)?
- What are some institutional improvements you would like to see (e.g. better signage, more bins)
- Do you know what Green Ware™ is?

UNH Initiative: Single Stream Recycling What we Found

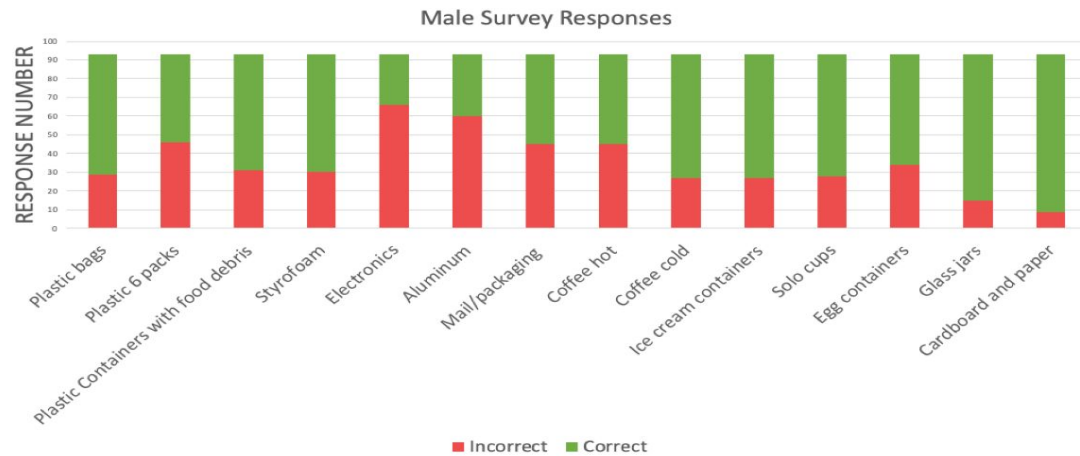
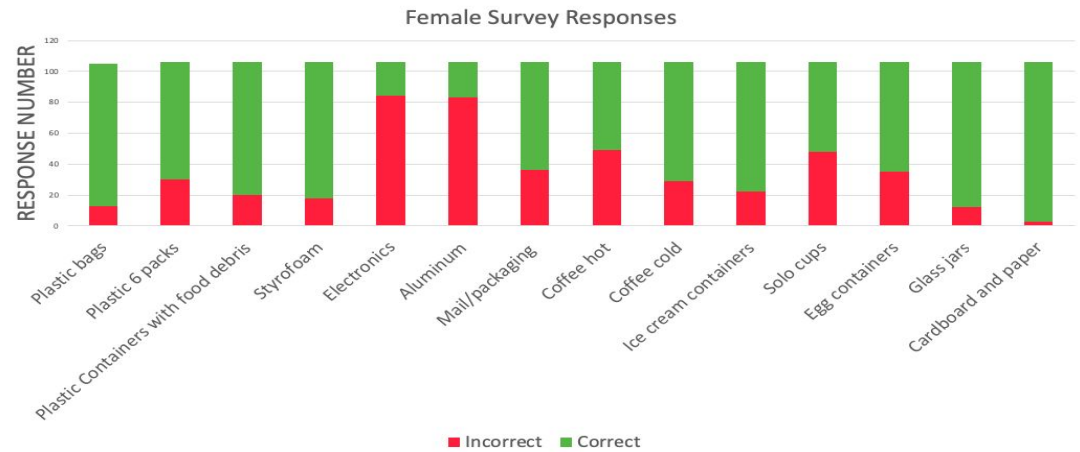


Main Findings:

- Uncertainty of what can and can not be recycled
- Uncertainty of recycling varies significantly by biological sex
- Support for a campus-wide ban on single use plastics
- Strong agreement that consistent signage is needed
- Disagreement by biological sex that more recycling receptacles is needed
- Greenware is consistently not disposed of correctly

Check which items that can be recycled on campus?

- Plastic bags (no)
- plastic 6-pack holders (no)
- Plastic containers with food debris (no)
- Styrofoam (no)
- Plastic mailing/shipping (no)
- Hot coffee cups (no)
- Cold coffee cups (no)
- Ice cream containers (no)
- Solo cups (yes)
- Egg cartons (yes)
- Glass bottles and jars (yes)
- Cardboard and paper (yes)
- Electronics (yes)
- Aluminum foil (yes/no if food)



Females have significantly more knowledge on how to recycle.

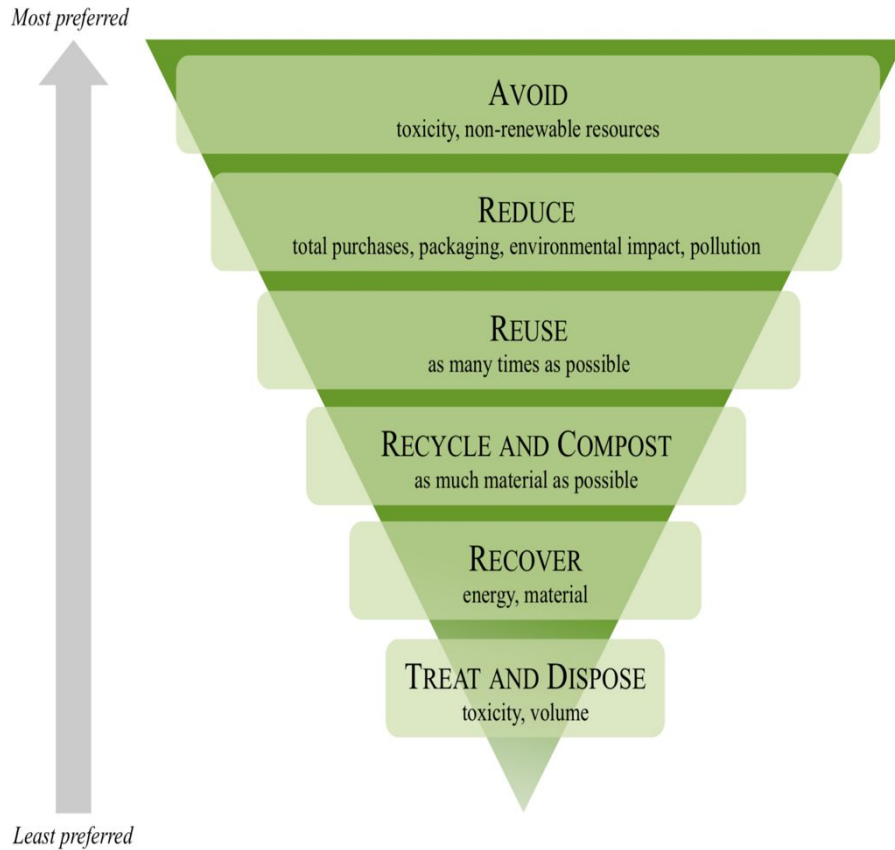
Electronics – CAN be recycled but only at specified times

Aluminum can NOT be recycled if food contaminated

Hot and Cold coffee cups can NOT be recycled

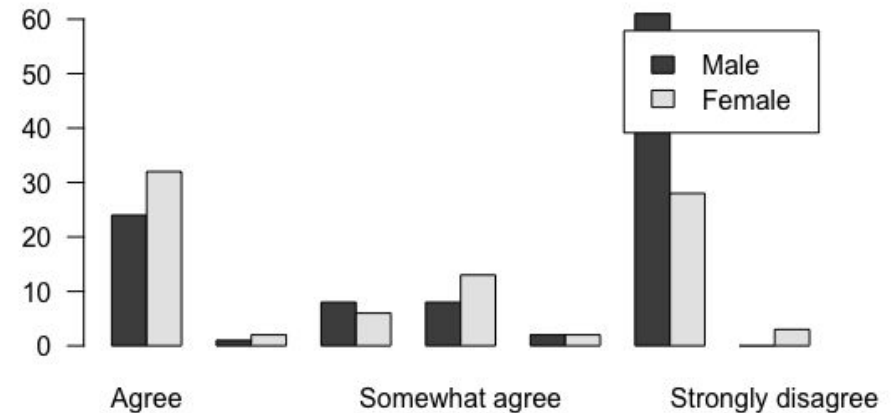
$$\chi^2_{(0.05,1)} = 7.16, \\ p = 0.02$$

Zero Waste Task Force reports significant student disappointment with recycling infrastructure, requesting more recycling bins, better signage, and stricter policies. (2017)



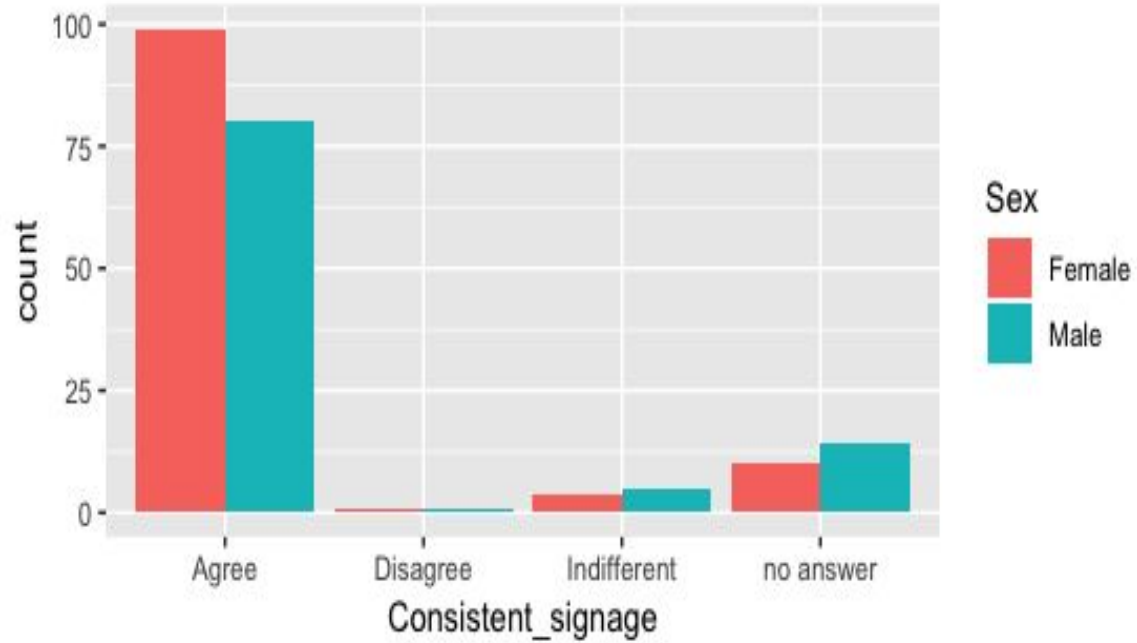
What will make recycling easier on campus?
More Recycling Bins?

Biological Sex and Require More Recycling Bins



What will make recycling easier on campus?

Consistent Signage?



Sample of inconsistent recycling and landfill bins (2017, Nesmith Hall)



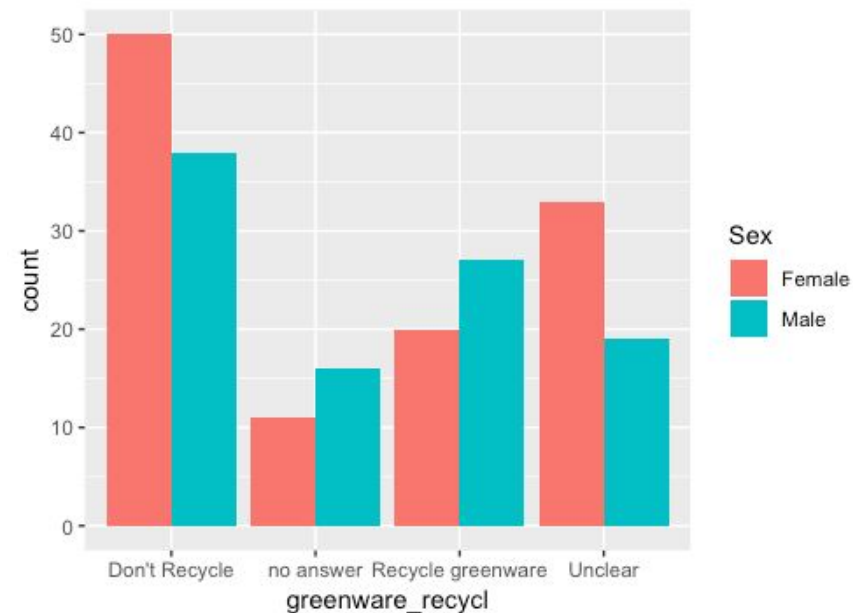
Improved signage in residence hall (2017)



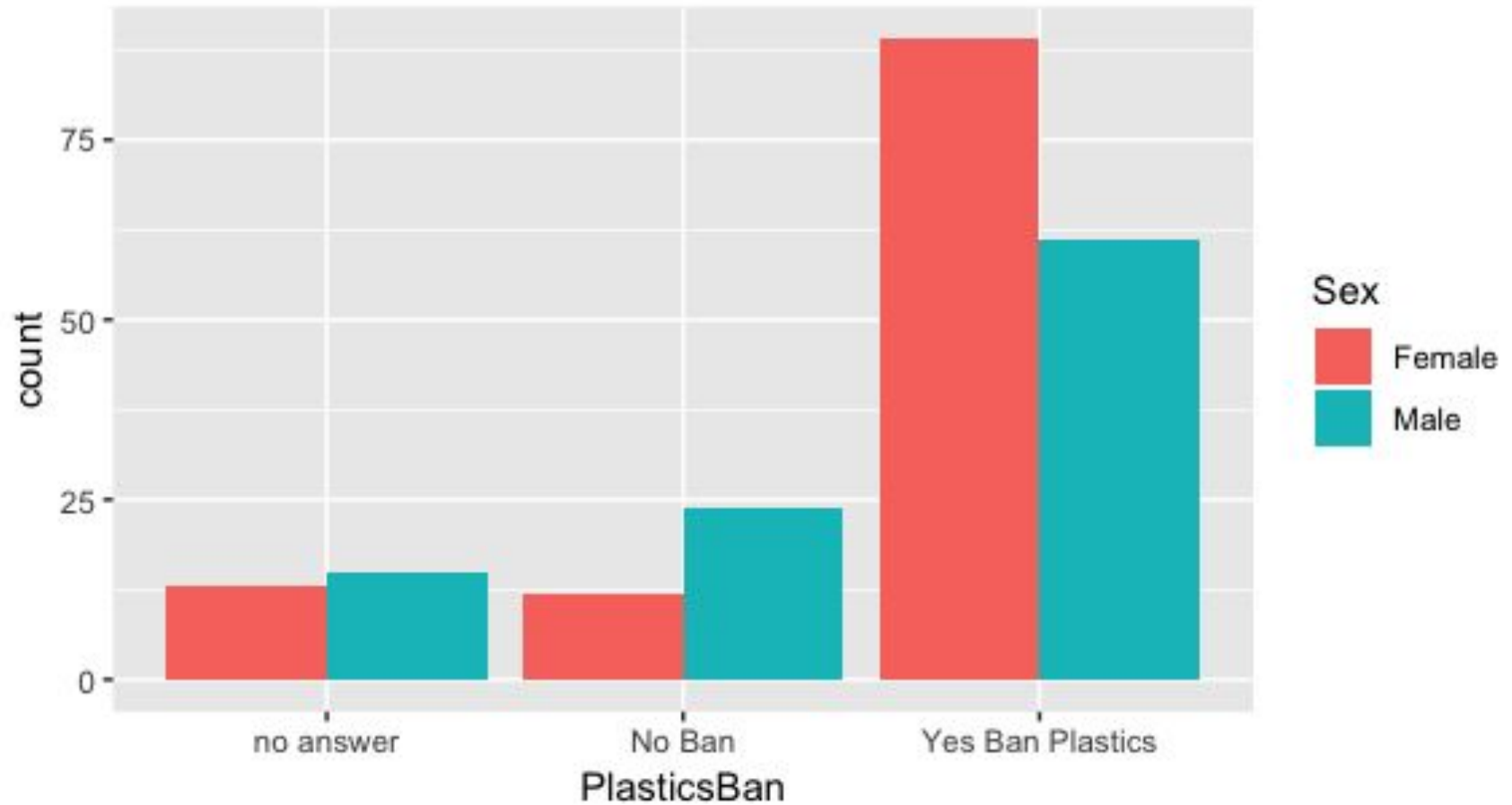
We asked: How do you dispose of greenware?



	Don't Recycle Greenware	Recycle Greenware	Unclear
Female	50	20	33
Male	38	27	19



We Asked: Would you support a ban on all single use plastics on UNH Durham campus?



Summary

Main Findings:

1. Uncertainty of what can and can not be recycled
2. Uncertainty of recycling varies significantly by biological sex
3. Support for a campus-wide ban on single use plastics
4. Strong agreement that consistent signage is needed
5. Disagreement by biological sex that more recycling receptacles is needed
6. Greenware is consistently not disposed of correctly



Next Steps

Recommendations to Zero Waste Task Force:

1. Consistency in signage
2. More recycling bins
3. Recycling Education
4. Reconsider approach to Greenware as an alternative to single use plastic

Continued Research:

1. How can we leverage differences in recycling behaviors across biological sex?
2. 85% of UNH Durham campus uses a re-usable water bottle. Target offering re-usable coffee containers and track how effective these initiatives are.
3. Evaluate and compare “zero waste” efforts at University events and resident halls.