

# Updating WildCAP: Reducing Emissions & Saving Money

Emily Donnery, Peter Wilkinson, Brenna Cahill, Tiffane Cormier, Kyle Bouchard, and Harmanpreet Signh

Faculty Advisor: Dr. Cameron Wake Presented at the 2013 UNH Interdisciplinary Science and Engineering Symposium

Cross-campus sustainable endeavors designed to reduce waste, cut carbon emissions, and save money for UNH and students were researched and discussed as part of ESCI 405: Global Environmental Change.

Four initiatives – detailed below – encourage sustainable behavior, cut electricity use and carbon emissions, and make UNH more sustainable. These initiatives will also be integrated into an update of UNH’s Climate Action Plan (WildCAP).

## Don't Delay! Decay!

**How can students compost food in kitchens on campus?**

**Hypothesis:** Installing compost bins in apartments on campus will reduce landfill waste, increase aerobic decomposition which eliminates emissions of methane gas, and promotes sustainable behavior.

**Plan:** Install small compost bins for the approximately 1,400 students living in apartments on campus. We estimate an average of 7 pounds of compost per week per student.

**Cost:** \$6,000

**Savings:** 300,000 lbs Compost per year

**Savings:** 58 tonnes CO<sub>2</sub>e per year



## Drying up Emissions

**How can students reduce the amount of machine-drying for clothes on campus?**

**Hypothesis:** Giving students the opportunity to use drying racks and/or clothes lines will save money, reduce electricity use and thus cut carbon emissions.

**Plan:** As a proof of concept, install 50 drying racks & 50 clothes lines using test locations in 2013-14 (e.g. sustainability floor in Adams Tower).

Then apply what was learned to all residence halls.

**Cost:** \$1,140

**Savings:** \$13,000/yr based on estimated 20% reduction in water use

**Savings:** 198 tonnes CO<sub>2</sub>e per year



## Stop the Drop



**How can students use less water?**

**Hypothesis:** Installing low-flow showerheads across campus will reduce water use, save UNH money in heating and water-treatment costs, and cut carbon emissions at the water-treatment plant.

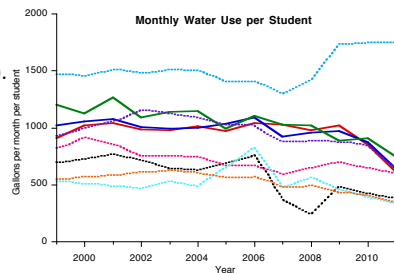
**Analysis:** We were told all residence halls have low-flow showerheads. However, we identified residence halls where water use is high or has not declined (see graph).

**Plan:** Check for low-flow showerheads in residence halls with little to no reduction in water use over the past 10 yrs (e.g. Hitchcock, Hetzel). Install new low-flow showerheads (estimate 250 needed).

**-Cost:** product & labor: \$4,000

**-Savings:** 170,000 gal water per year

**-Savings:** 6 tonnes CO<sub>2</sub>e per year



## Now Watt?

**How can UNH use less electricity for outdoor lighting?**

**Hypothesis:** Replace metal halide and high pressure sodium streetlights on campus with LED bulbs. These lights will have a longer lifespan (reducing labor costs associated with replacing light bulbs), and reduce electricity use and carbon emissions.

**Cost of product and labor:** \$650,000

**Savings:** \$150,660/yr

**Savings:** 254 tonnes CO<sub>2</sub>e per year

