

## Duck Feeders at the Millersville University Pond

### Abstract

The pond at Millersville University is one of the most popular spots on campus. Often, students will bring bread to feed the ducks. This is very common at any duck pond. However, just because it is common does not mean it is safe. It is not safe for ducks to consume bread for multiple reasons, which will be discussed in this article, as well as the action that should be taken to avoid harming the wildlife: Duck feeders should be installed at the Millersville University pond. The proposal is to supply 3 duck feeders by the pond and is based off a budget of \$500, and explains the details of obtaining and sustaining the duck feeders.

### Background

The pond at Millersville University is one of the most popular spots on campus. The pond is great for relaxing while watching the ducks glide along the surface of the water. Often, students will bring bread to feed the ducks. This is very common at any duck pond. Just because it is common does not mean it is safe. It is not safe for ducks to consume bread for multiple reasons:

1. Bread does not meet the necessities of a duck's diet.
2. Leftover bread will spoil, which is not healthy to consume.
3. Bread that sinks to the bottom causes algae blooms which can kill the underwater life.
4. Leads to diseases such as "angel wing" (see photo).



**Angel Wing**

Image source in references.

Even though the ducks do have the appropriate food available to them within the vicinity of the pond, students still feed the ducks because it's enjoyable. If people want to feed the ducks, we should offer food that is appropriate for them. The pond has been set up to admire nature and wildlife. Millersville University is known for its pond and two famous swans: "Miller" and "Sville". Therefore, we should treat the wildlife with respect and keep our good reputation by feeding our birds the proper food.

According to Russell McLendon, a science editor for Mother Nature Network (2015), research has shown that feeding ducks bread is unsafe and unhealthy. McLendon's research found that:

1. A duck's diet needs to include vitamin D and E, and not so many calories.
2. Bread that is left on land will mold. Once the bread molds, it becomes even more dangerous to consume.
3. Algae blooms discolor the water and drain oxygen from the water.
4. "Angel wing" occurs when a duck does not get its proper nutrition. When a duck has angel wing, their wings stick out to their sides, prohibiting them from relaxing their wings by their sides. This prevents them from flying.

To help prevent these problems from developing, Millersville University's duck pond needs duck feeders. The duck feeders will contain the appropriate food for the ducks. The student must insert a quarter in order to get a handful of duck food. In addition to keeping the ducks out of harm's way, Millersville will be able to generate revenue from the duck feeders. That revenue can be used toward purchasing additional feed to refill the dispensers.

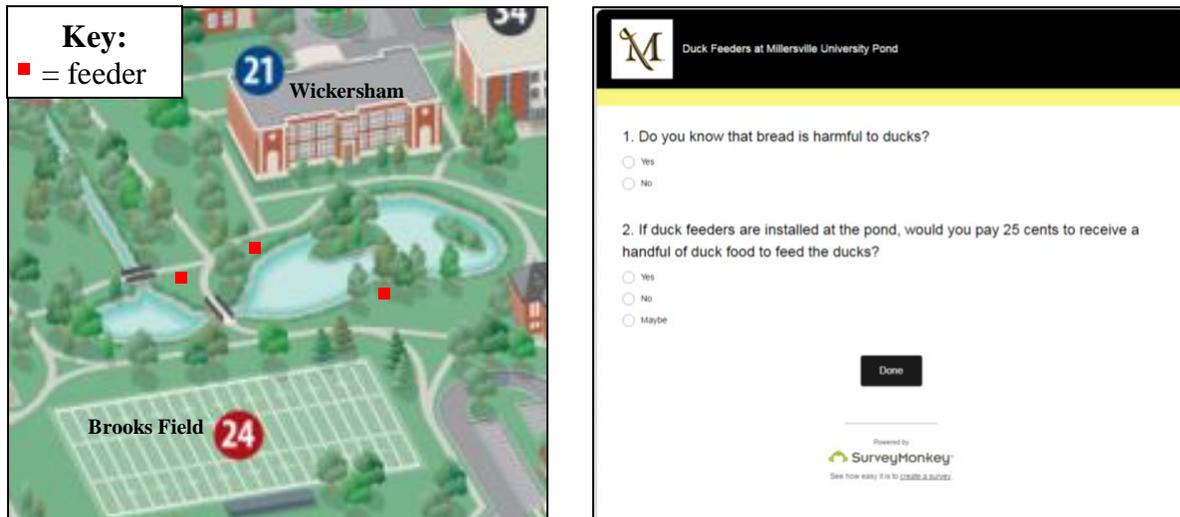
## Project Design

I plan to create a survey and send it through email to the Millersville University student body. The survey will consist of two questions listed below:

- Do you know that bread is harmful to ducks?
- If duck feeders are installed at the pond, would you pay 25 cents to receive a handful of duck food to feed the ducks?

If there is a positive response for using the duck feeders, I will contact local newspaper companies, as well as our university's newspaper, *The Snapper*, and let them know Millersville University will be installing duck feeders to keep our wildlife out of harm's way. My hope is that a story will be written about our duck feeders which will give awareness to those that don't know about the effects of bread on ducks.

I will order the duck feeders through Gumball Machines Direct (link provided in the references). I will order three black 25 cent vending machines. Each vending machine can hold up to \$150 worth of quarters. The money that is put into the machines can be reinvested back into the pond and can be used to buy additional duck food to replenish the dispensers. I have provided a map showing the prospective general location of the three feeders. I have also included a screenshot of the survey that would be distributed to the student body.



Once we get the duck feeders, we can utilize the Applied Engineering, Safety, and Technology department in order to save money on material and labor costs. Construction Technology major students can practice their studies by installing the duck feeders. This project could not only benefit our construction technology students, but also our Graphic Communication, Computer Aided Drafting and Design, and Advanced Manufacturing technology students. Here is how:

- Construction Technology: installing duck feeders
- Graphic Communication: designing logo to attach to duck feeders
- CADD: taking logo and repurposing it to a .stl file to extrude it, as well as creating a drawing for the metal stake
- Advanced Manufacturing: welding extruded logo onto feeders, as well as manufacturing and welding a metal stake onto feeders

## **Concluding Remarks**

Millersville University prides itself on being an eco-friendly university, especially with its recent build of the Lombardo Zero Energy Welcome Center. One of the attractions of Millersville University is its scenic pond with ducks and the two famous swans: Miller and Sville. Installing duck feeders and posting the reasons behind installing them would contribute to the goal MU is striving toward: a sustainable campus.

## **Resources:**

### **Research:**

McLendon, R. (2015, November 19). 3 reasons why you shouldn't feed bread to ducks. Retrieved March 19, 2017, from <http://www.mnn.com/earth-matters/animals/blogs/why-you-shouldnt-feed-ducks-bread>

### **Angel Wing Image:**

Wikimedia Commons; File: Angelwing.jpg

<https://commons.wikimedia.org/wiki/File:Angelwing.jpg>

### **Duck Feeder: Gumball Machines Direct**

<http://www.gumballmachinesdirect.com/animal-feed-vending-machine.html>

### **Duck Food: McGeary Organics**

<https://www.mcgearyorganics.com/organic-feed/>

## **Biography**

Abigail Barnhart is a junior studying Applied Engineering with a concentration in Computer Aided Drafting and Design. She has always loved ducks growing up, so the duck pond was one of the amenities that attracted her to Millersville University. She always wondered why there were no duck feeders by the pond, and upon research, she discovered how harmful bread can be to ducks. Not a lot of people realize this, so she is hoping to spread the word while also supplying students, faculty, staff, and visitors with the proper food to feed the ducks. She is striving to get this project funded and have it complete prior to graduating in May of 2019.