Pistia Stratiosites and Pomecea Insularum’s Ability For Bioremediation of Copper
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Hypothesis
The presence of P. stratiosites and P. insularum will bioremediate the copper treated pond water better than just P. stratiosites or P. insularum.

Abstract
Central Florida’s waters are in critical need of restoration. Recognizing which plants and animals help in restoring our waters will provide a realistic and cost efficient solution. Our research focused on the capacity of the P. stratiosites and P. insularum, which are both classified as invasive, to improve water quality in lake systems contaminated with Cu. To perform this project, we created an environment suitable for the animals involving a recirculating system. Overall, the system contained 8 tubs; a control, plants, snails, and plants and snails. Out of the six weeks of expected research only four weeks were conducted due to the initial spraying of Cu and lack of health of the snails. After restabishing the tubs we were able to conduct four weeks of data. We assessed the efficiency of bioremediation by testing the levels of Cu within each of the eight tubs. The water from each tub was tested for the concentration of Cu and was read using a photometer. The results showed that P. insularum were more efficient than P. stratiosites and together they were less efficient than P. insularum alone. Further research will be required to determine if the classified invasive species P. stratiosites and P. insularum are sufficient at the removal of Cu in lake systems.

Discussion
- P. insularum were more efficient than P. Stratiosites at the removal of Cu.
- P. insularum and P. Stratiosites together were less efficient than P. insularum alone.
- P. insularum bioaccumulate Cu most significantly through the diet and soil.
- P. Stratiosites has a lower biomass than P. insularum, possibly attributing to its efficiency in bioremediation.
- Technical difficulties of the YSI 9500 for testing of Cu concentrations.
- Salt Sprays could be an effective alternative to sprays containing Cu.
- It is also important to note the condition of the P. Stratiosites over the four weeks was browning, wilting and showing signs of dying.
- In addition to the P. Stratiosites dying some of the P. insularum showed decreasing health.

Methodology
- 8 tubs were filled with 10 gallons of Cu treated pond water from pond 9 at UCF
- Two tubs with only P. insularum, two with only P. stratiosites, two with both P. stratiosites and P. insularum, and two control tubs with just pond water
- Water tested every week with urban water testing kits and 9500 YSI Photometer

Results
Figure 1 shows the trends of total copper in parts per million (ppm) over a four week time period. In the four different trials the amount of copper went down each week and got the lowest in the tank with only P. insularum and remained the highest in the control. Figure 2 shows the standard error and that there is no significant difference between the results.

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References