



The Environment and You

The Stars Challenge at Monmouth University 2010

We began by looking into some of the ways decisions humans make are impacting the natural world. We also shared personal experiences of special natural places to understand just what was at stake.

Whale Pond Brook, the stream that runs through Monmouth University, was targeted for intensive investigation. Fun was had by all as we suited up in waders and ventured into the mud. Some of us displayed a talent for getting stuck in the mud and required repeated rescue. Serious science followed as we calculated rates of stream flow, surveyed macroinvertebrates, and took water samples for chemical analysis. Our findings were mixed. The rampant development around the watershed has negatively impacted the water quality, and a loss of biodiversity has occurred. However, the watershed did seem to be moderately healthier than in previous years, which indicated that some of the steps taken by the community were having a beneficial impact.

Human Induced Climate Change was our next topic of study. We manipulated carbon dioxide levels and measured heat retention in experimental atmospheres. The conclusion was unambiguous: raising carbon dioxide levels in our atmosphere force it to retain more of the sun's energy and raise the temperature of the Earth. We ended by investigating ways to change our energy usage patterns to reduce carbon dioxide emissions through the use of wind, solar and biofuel energy.

Commitments were also made by each student to participate in the Jersey Shore Science Fair, a competitive event where students will conduct their own original scientific investigations. Many students chose to pursue environmental topics. I look forward to continuing to work with them as they prepare for the March 2011 event.

Tread lightly on the Earth. Remember that your decisions have consequences. Take care of this precious blue world, the only home you'll ever know.

It's been my honor and pleasure to work with you.

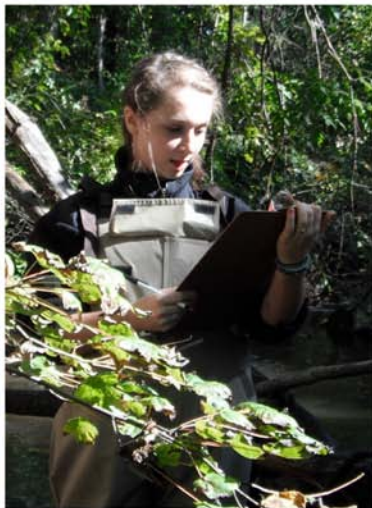
E. Marc Coe





Exploring Whale Pond Brook - the water, the flora, fauna and the mud.





We determined that Whale Pond Brook has two distinct sources of water; runoff and upstream flow.

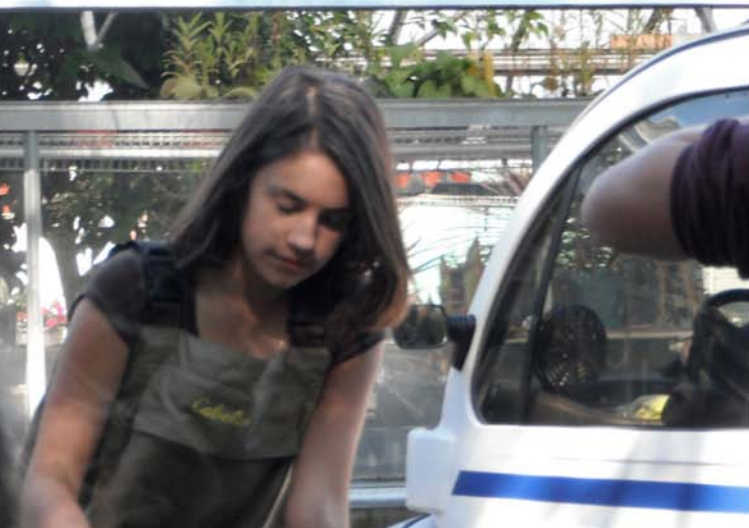


We were amazed by all the macroinvertebrates we found hiding in the mud.



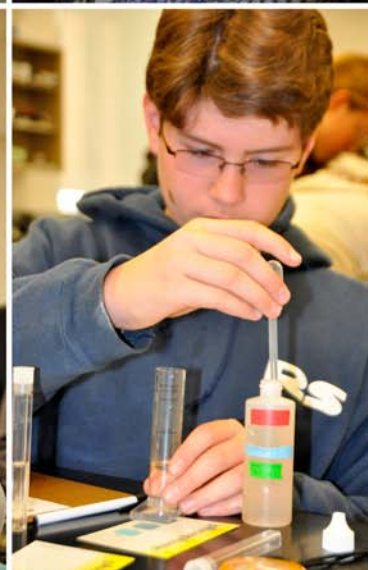
The dragonfly larvae were especially treasured and given names and much love. Some were adopted as pets, to the delight of our parents.





Experts shared their wisdom with us. A parasite specialist, Dr. Donald Dorfman, Emeritus Professor of Biology, showed us what hides inside the fish we found in the brook. Ms. Kayla Connor, an Americorps NJ Watershed Ambassador, demonstrated an uncanny ability to find a plethora of bugs in every nook and cranny of the watershed.







Some of us demonstrated a knack for finding the most viscous mud available. We draw conclusions on the health of the ecosystem.



Green energy was investigated through the construction of windmills, solar cars and solar hot water heaters. We were surprisingly competitive and tweaked our creations again and again to optimize their performance.

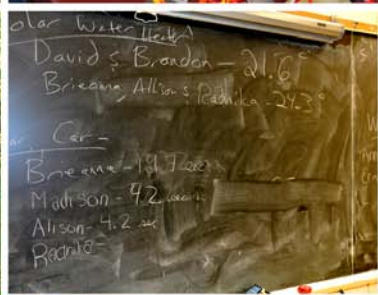
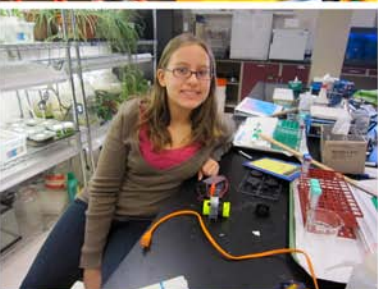








Experiments were performed on each design to determine which elements were critical to the performance of the finished product.





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